A sock for a foot, including toe compartments that can receive a toe of the foot. Each of the toe compartments is connected at a position along its length to an adjacent one of the toe compartments.
SOCK WITH CONNECTED TOE COMPARTMENTS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
[0002] The present invention relates to a sock for the foot, and more particularly to a sock including connected toe compartments.
[0003] 2. Description of the Related Art
[0004] Conventionally, a sock consists of only an elongated fabric pocket. When worn with shoes, these socks can cause foot irritation and discomfort. For example, the foot can become irritated from deformation of the foot experienced during strenuous activity. In addition, use of these socks can lead to abnormal reliance on a shoe (as opposed to the foot) for balance support, thus preventing natural healthy functioning of the foot.
[0005] Thus, there is a need for a sock with improved support and protection.

SUMMARY OF THE INVENTION

[0006] In one aspect of the disclosure, a sock for a foot is provided, where the sock includes toe compartments each of which is adapted to receive a toe of the foot. Each of the toe compartments is connected at a position along its length to an adjacent one of the toe compartments.
[0007] Each of the toe compartments can be connected along an entire length of one of its sides to an adjacent one of the toe compartments.
[0008] Each of the toe compartments can be connected to the adjacent one of the toe compartments by Z-stitching.
[0009] The toe compartments can include a supportive elastic material to support the toe.
[0010] The sock can include a strip of semi-rigid plastic on which the toe compartments are disposed. This semi-rigid plastic can act as a backing for the Z-stitching.
[0011] The sock can be worn under a normal shoe.
[0012] Each of the toe compartments can be adapted to receive only one toe.
[0013] This brief summary has been provided so that the nature of the invention may be understood quickly. A more complete understanding of the invention can be obtained by reference to the following detailed description of the preferred embodiment thereof in connection with the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a schematic view of a sock according to an example embodiment.
[0015] FIG. 2 is a top view of a part of a sock according to an example embodiment.
[0016] FIG. 3 is a bottom view of a part of a sock according to an example embodiment.

DETAILED DESCRIPTION

[0017] FIG. 1 is a schematic view of a sock according to an example embodiment. The sock 10 includes a foot area 11, an ankle area 12, a leg area 13, and a cuff 14. The material used for the general construction of the sock can be a conventional sock material. For example, the sock's general construction can utilize COOLMAX (TM) or a similar material (e.g., polyester fibers uniquely engineered with gradient fabrics to move moisture) weighing approximately 3.5 ounces per yard. The sock 10 is typically to be worn under a normal shoe, such as a professional or athletic shoe.

[0018] FIG. 2 is a top view of a part of foot area 11 according to an example embodiment. Foot area 11 includes a toe area 15, which is typically made of a supportive elastic material. For example, the toe area 15 can include elastic and/or spandex yarn incorporated with COOLMAX (TM) fibers to provide compressive support specifically for the toe area. Reference numeral 16 denotes a conventional sock material that can be used for the general construction of the sock.

[0019] The toe area 15 includes toe compartments 21, 22, 23, 24, and 25, each of which can receive a single toe. Each of the toe compartments can be connected along an entire length of one of its sides to an adjacent one of the toe compartments. For example, as shown in FIG. 2, toe compartment 21 is connected along an entire length of one of its sides to the adjacent toe compartment 22. Toe compartments 21 to 25 can be connected using a wide Z-stitching 30, which can keep the toes straight and parallel. The supportive elastic material constituting each toe compartment can essentially hug the toe laterally. By virtue of this arrangement, it is possible to prevent the toes from rubbing against one another, while at the same time avoiding additional bulk in the toe-box of the shoe.

[0020] The Z-stitching 30 can be flexible and elastic enough that the toe compartments can take on the shape of many different toe sizes. In addition, the Z-stitching 30 can make it possible to create a toe compartment by bringing a top and bottom layer of fabric together, without having another layer of fabric between the toe compartments, which might create additional bulk. In another embodiment, the toe compartments could be formed by weaving the top and bottom layers together.

[0021] The width of the Z-stitching 30 can be approximately ½ inches before insertion of feet and toes into the sock. The length of each Z-stitch can vary from 0.75 inches to 1.25 inches depending on the particular compartment and size of the socks.

[0022] FIG. 3 is a bottom view of a part of the foot area 11 according to an example embodiment. A thin semi-rigid backer 40 for Z-stitching 30 can be integrated below the toe area. Thin semi-rigid backer 40 can provide additional structure to keep toes from shifting or over/underlapping each other during strenuous activity, and can create an additional foundation for toe area support. The semi-rigid backer 40 can be, for example, a thin gauge, die-cut, high density polyethylene (HDPE) sheet or a thin gauge polycarbonate sheet. The thickness of the sheet can be, for example, approximately 3 mil.

[0023] The semi-rigid backer 40 can attach via the same Z-stitching that connects the toe compartments. In another embodiment, a flexible permanent adhesive (that could be washed repeatedly) can be used to attach the semi-rigid backer.

[0024] Accordingly, a sock for the foot is provided which can keep toes straight and parallel, resulting in less irritation or discomfort while wearing shoes. The sock can reduce toe irritation resulting from short-term toe deformation during strenuous activity, and can provide additional support specifically targeting the toes.

[0025] This disclosure has provided a detailed description with respect to particular representative embodiments. It is understood that the scope of the appended claims is not lim-
ited to the above-described embodiments and that various changes and modifications may be made without departing from the scope of the claims.

What is claimed is:

1. A sock for a foot, comprising a plurality of toe compartments each of which is adapted to receive a toe of the foot, wherein each of the plurality of toe compartments is connected at a position along its length to an adjacent one of the plurality of toe compartments.

2. The sock according to claim 1, wherein each of the plurality of toe compartments is connected along its entire length to the adjacent one of the plurality of toe compartments.

3. The sock according to claim 1, wherein each of the plurality of toe compartments is connected to the adjacent one of the plurality of toe compartments by z-stitching.

4. The sock according to claim 1, wherein each of the plurality of toe compartments comprises a supportive elastic material to support the toe.

5. The sock according to claim 1, wherein the sock further comprises a strip of semi-rigid plastic on which the plurality of toe compartments is disposed.

6. The sock according to claim 5, wherein each of the plurality of toe compartments is connected to the adjacent one of the plurality of toe compartments by z-stitching, and wherein the strip of semi-rigid plastic acts as a backer for the z-stitching.

7. The sock according to claim 5, wherein the semi-rigid plastic is polycarbonate.

8. The sock according to claim 1, wherein the sock is to be worn under a normal shoe.

9. The sock according to claim 1, wherein each of the plurality of toe compartments is adapted to receive only one toe.

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