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Girolami et al.

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(54) **FLEXIBLE LIGHTING APPARATUS**

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(51) **Int. Cl.**

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F21V 21/14 (2006.01)
F21V 23/06 (2006.01)
F21V 17/00 (2006.01)
F21V 21/005 (2006.01)
F21L 14/02 (2006.01)
F21V 19/00 (2006.01)
G03B 15/02 (2006.01)

(52) **U.S. Cl.**

CPC **F21V 21/145** (2013.01); **F21L 14/023** (2013.01); **F21V 17/007** (2013.01); **F21V 19/0025** (2013.01); **F21V 21/005** (2013.01); **F21V 23/06** (2013.01); **G03B 15/02** (2013.01)

(58) **Field of Classification Search**

CPC F21Y 2105/001; F21V 19/002; F21V 19/0025; F21K 9/30; F21S 4/26; F21S 4/24

See application file for complete search history.

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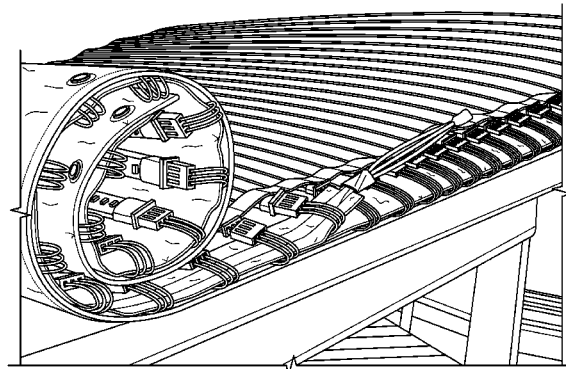
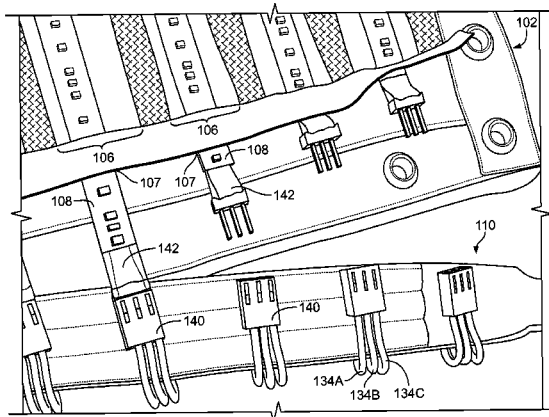
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(57) **ABSTRACT**

A lighting apparatus comprising a light emitting diode (LED) arrangement encased in a blanket-like body is provided. The blanket-like body is constructed in a manner allowing for the lighting apparatus to be rolled up for ease of storage and transport.

10 Claims, 7 Drawing Sheets



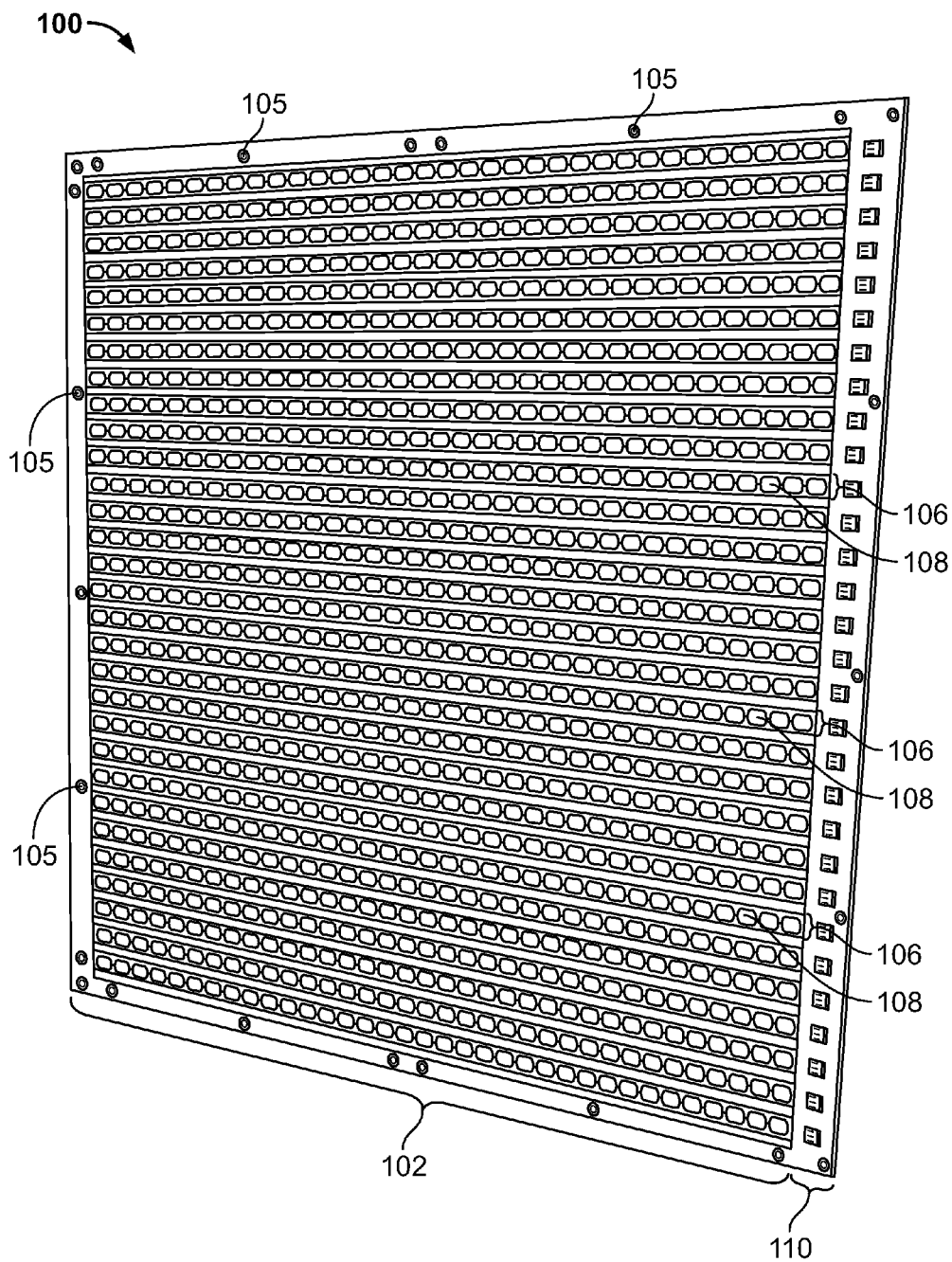


FIG. 1

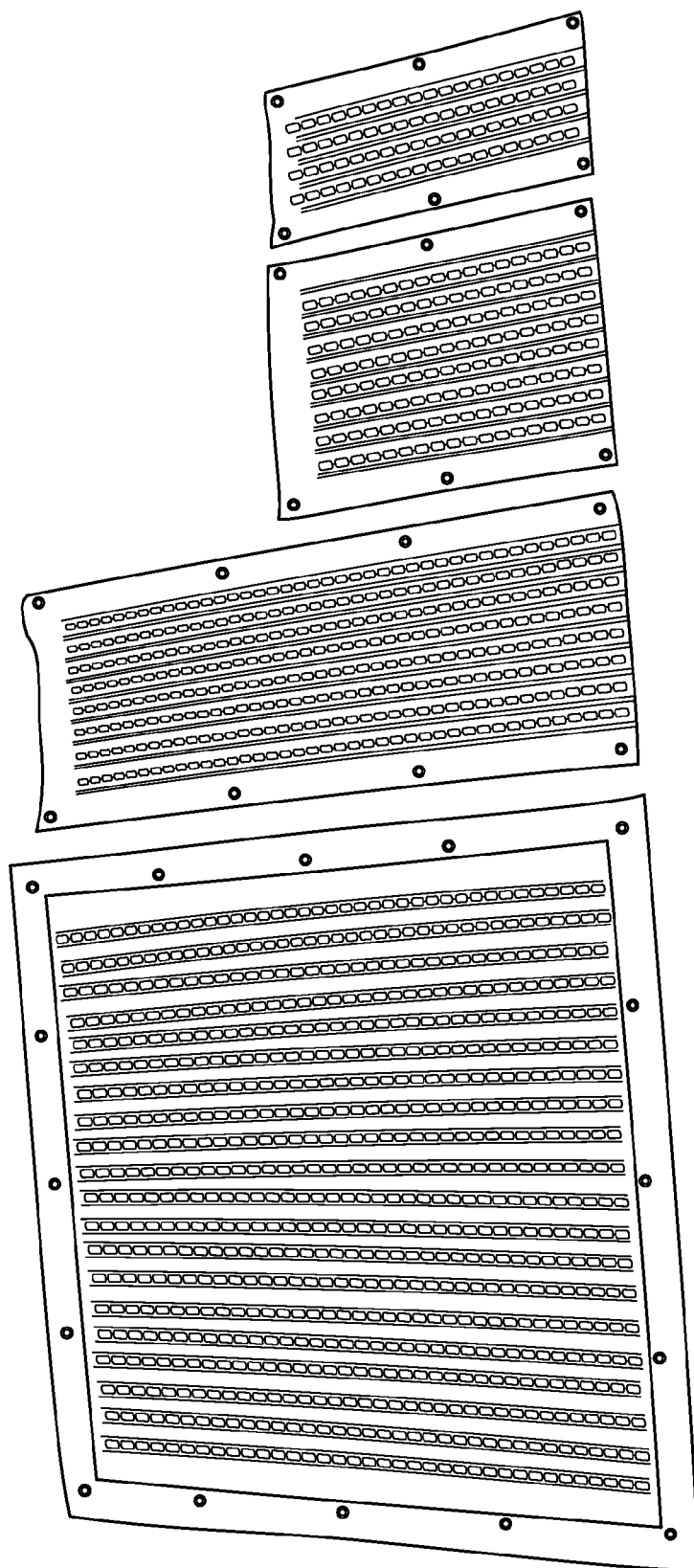


FIG. 2

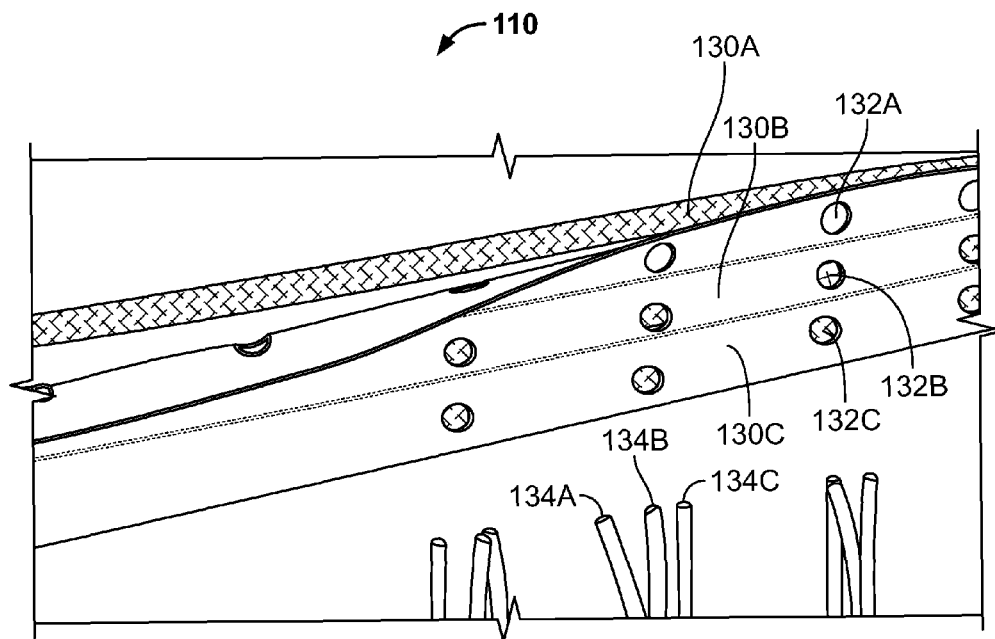


FIG. 3A

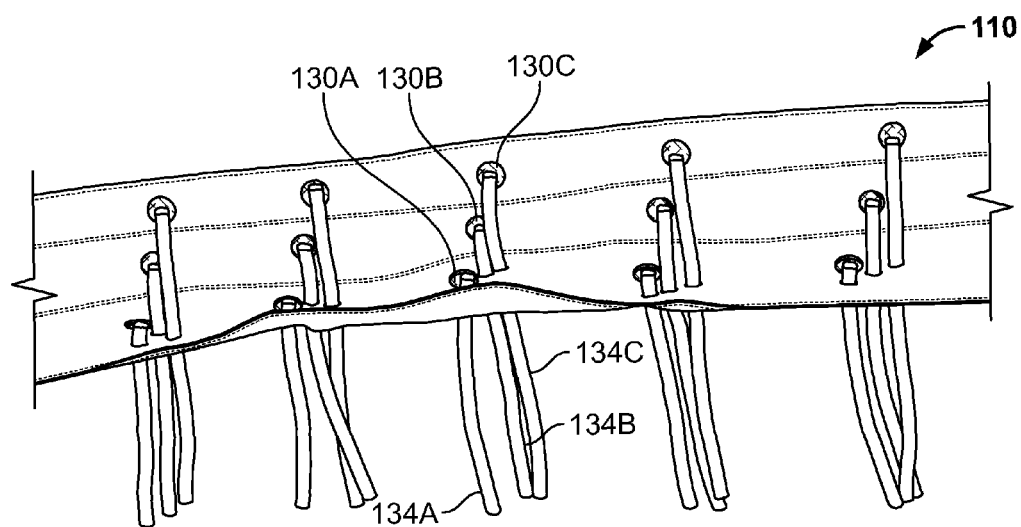


FIG. 3B

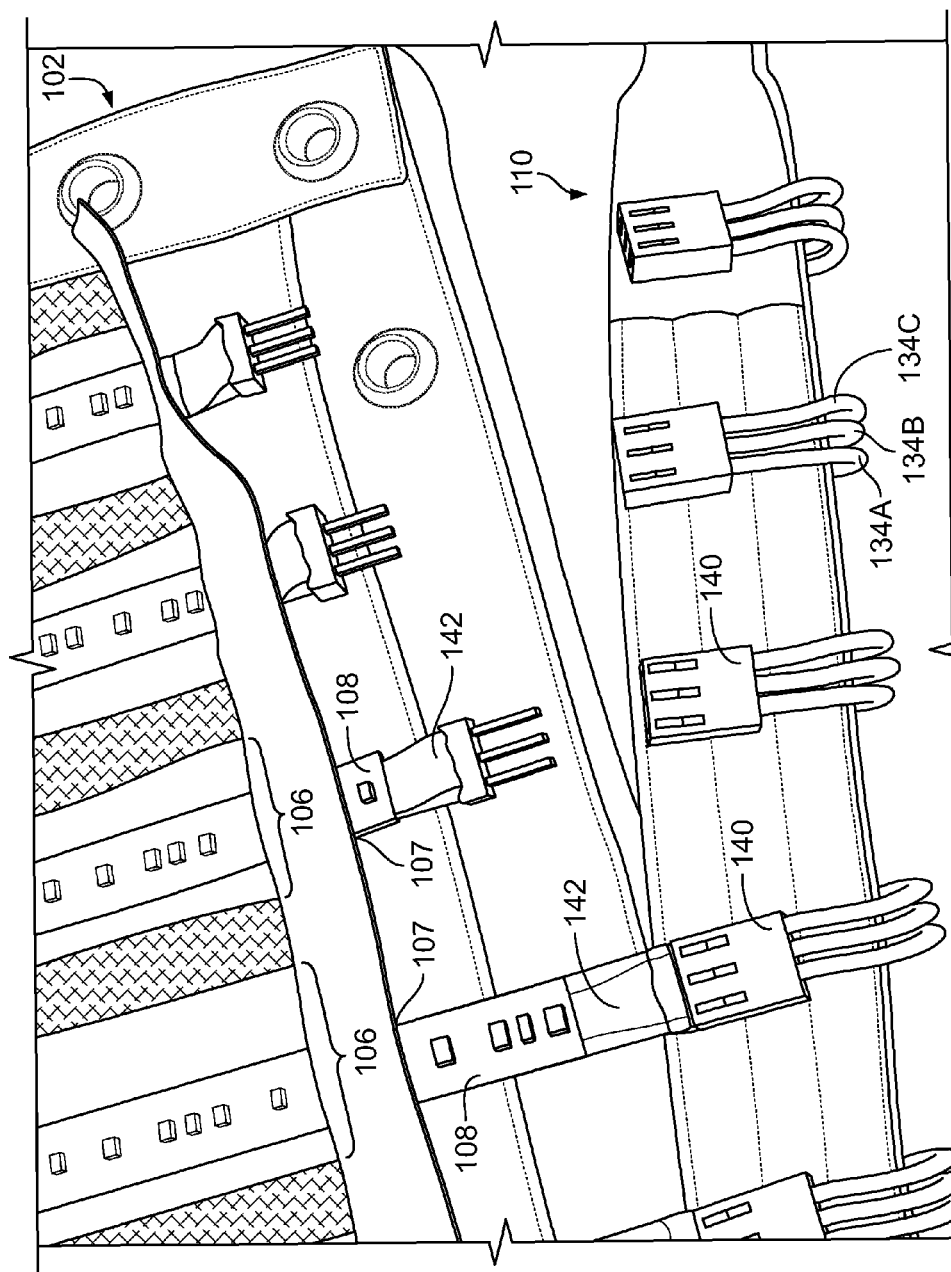


FIG. 4A

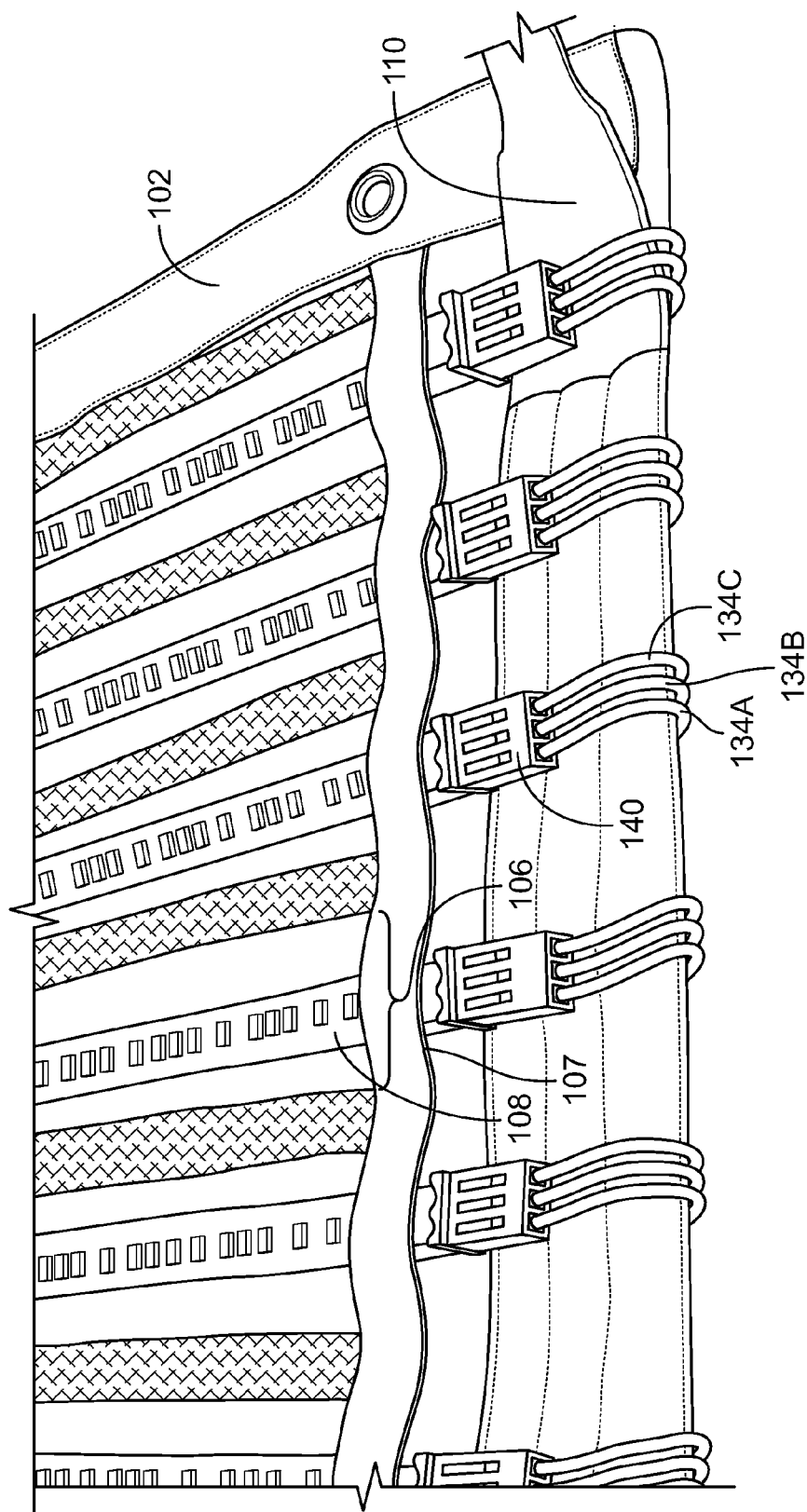


FIG. 4B

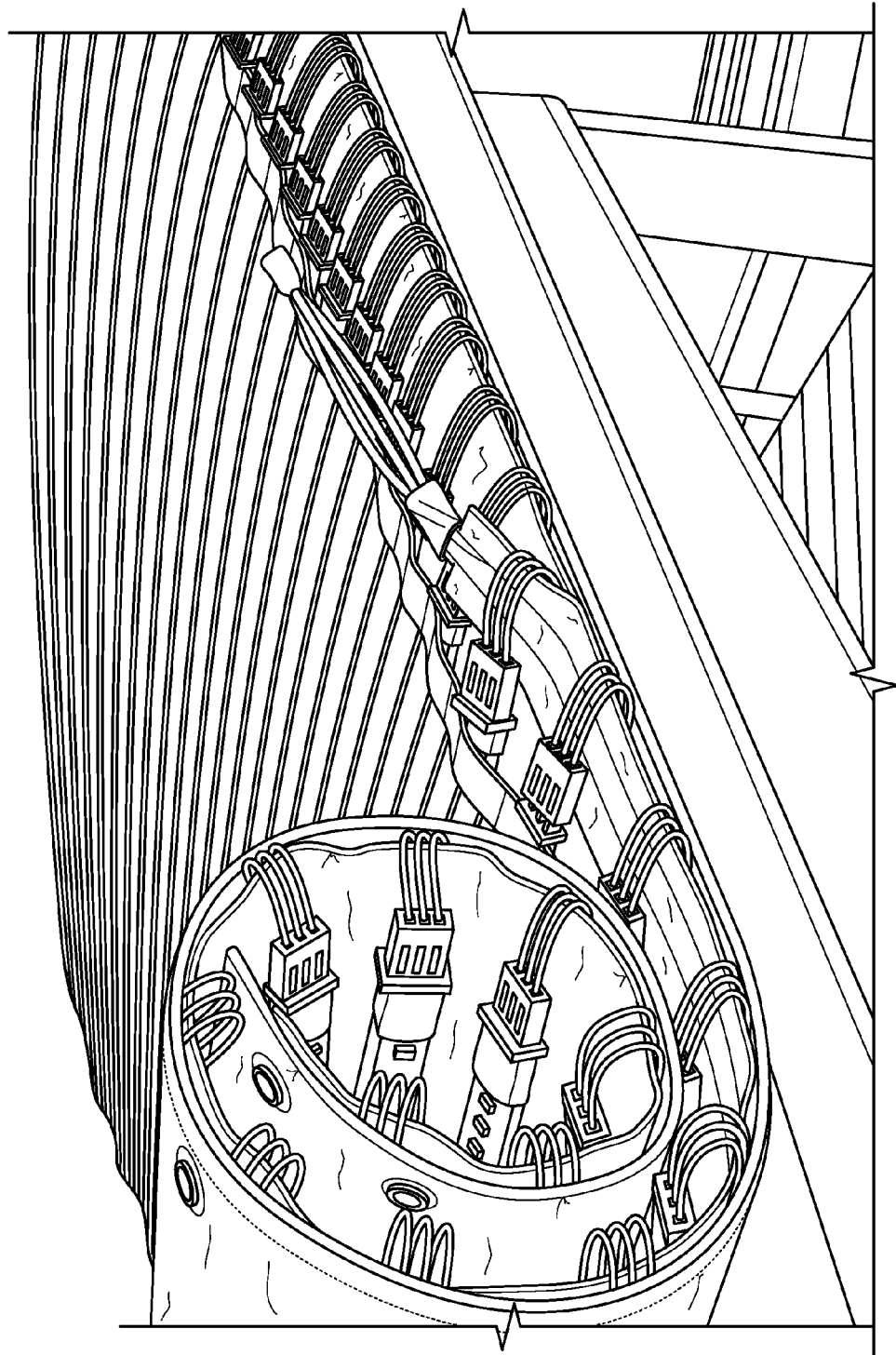


FIG. 5A

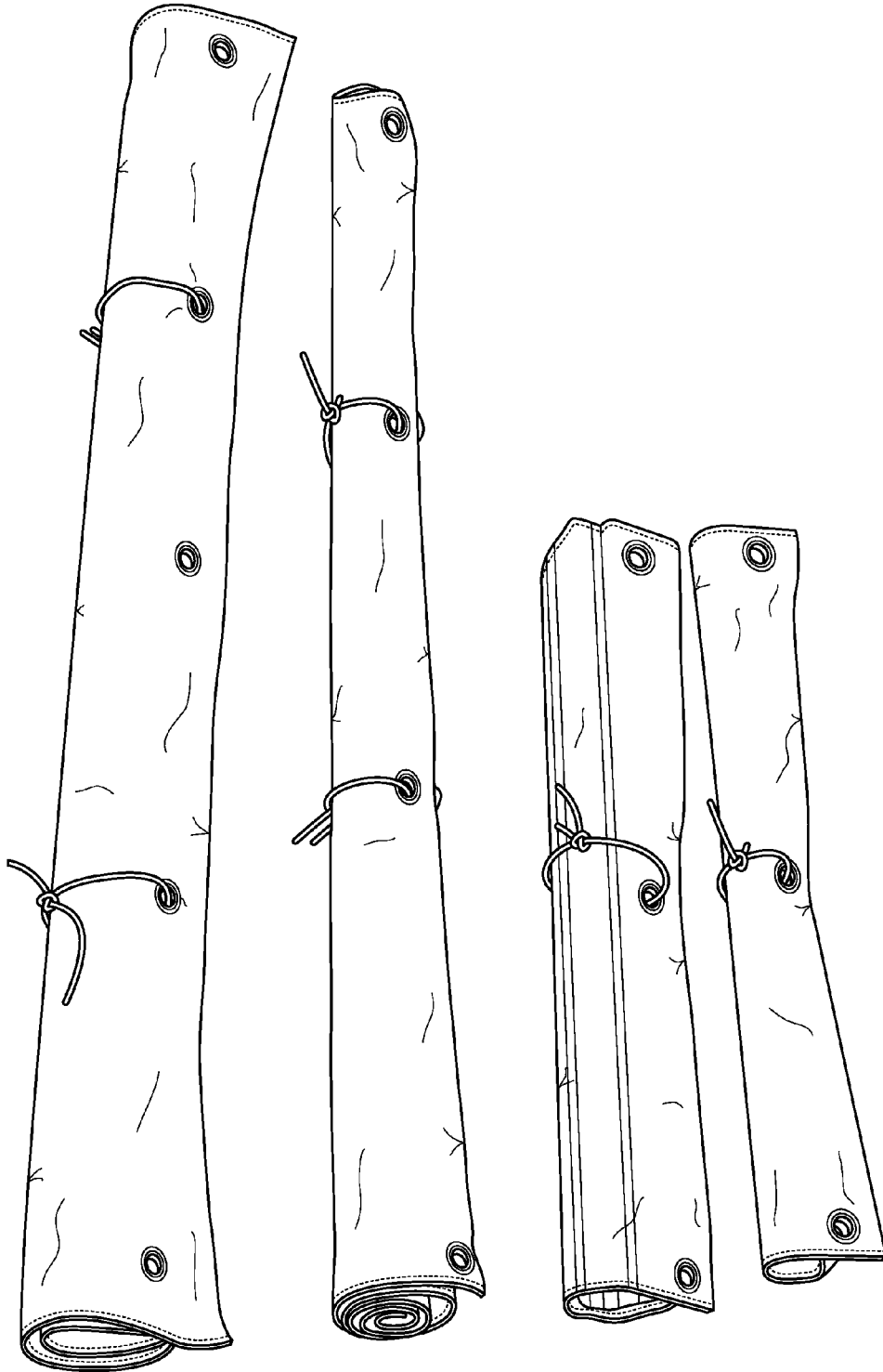


FIG. 5B

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FLEXIBLE LIGHTING APPARATUS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application No. 61/937,406, filed Feb. 7, 2014, the entire disclosure of which is incorporated by reference herein in its entirety.

TECHNICAL FIELD

Embodiments of the invention relate generally to a lighting apparatus and, more particularly, to a light emitting diode (LED) arrangement encased in a blanket-like body.

BACKGROUND

Proper lighting is essential in the filming and photography industry. However, many of the traditional lighting solutions offered in the industry are limited by their ability to accommodate multiple applications. This is often the case, for example, when there are frequent changes in lighting requirements or placement position. Moreover, many of the traditional lighting solutions are often impractical, lacking ease of quick setup and transportability.

Accordingly, there is a need for improved lighting solutions with particular applicability in the filming and photography industry.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example, and not by way of limitation, and will become apparent upon consideration of the following detailed description, taken in conjunction with the accompanying drawings, in which like reference characters refer to like parts throughout, and in which:

FIG. 1 illustrates a lighting apparatus in accordance with an embodiment of the present invention.

FIG. 2 illustrates varying dimensions of the lighting apparatus.

FIGS. 3A and 3B illustrate a wiring harness of the lighting apparatus.

FIGS. 4A and 4B illustrate a wiring harness coupled to the blanket body and LED arrangement of the lighting apparatus.

FIGS. 5A and 5B illustrate, respectively, a partially rolled up and a fully rolled up blanket body of the lighting apparatus.

DETAILED DESCRIPTION

FIG. 1 illustrates an embodiment of a lighting apparatus 100 comprising a blanket-like body 102 that is adapted to be suspended from a structure (e.g., a frame). Body 102 is constructed of a flexible, yet durable, material and may be comprised of a plurality of apertures 105 along its periphery to permit a variety of suspension positions. Various dimensions of body 102 may be provided, as illustrated in FIG. 2, to service different lighting applications.

Body 102 is further comprised of a plurality of pockets 106 adapted to receive a plurality of LED arrangements 108 therein. An LED arrangement 108 may be, for example, a flexible LED ribbon or a rigid LED strip having a plurality of LED lighting elements affixed thereon. A rigid LED strip, for example, may be a color corrected lighting strip made for

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film, television or broadcast purposes, wherein the LED lighting elements affixed thereon may have, for example, an alternating tungsten/daylight color to allow for complete control of color temperature. It is envisioned that a plurality of lighting mixtures and color variations may be used including, but certainly not limited to, tungsten, daylight, RGB, RGBA, RGBW, hybrids or any other suitable combinations thereof.

Pockets 106 may be constructed from a rigid, clear plastic formed in the shape of a tubular conduit having an opening 107 at its end, as illustrated in FIGS. 4A and 4B. An LED arrangement 108 may be slidably affixed and encased within a pocket 106 via opening 107. By allowing for LED arrangements 108 to be individually encased in each of pockets 106, any one LED arrangement 108 may be easily removed, replaced or interchanged.

Lighting apparatus 100 further comprises a wiring harness 110 that may be electrically coupled to the plurality of LED arrangements 108 provided in pockets 106 of body 102. Wiring harness 110 may form part of body 102 or be provided as a separate component part appended to body 102. Wiring harness 110 may be constructed of a durable material, similar to that used in the construction of body 102, and may also comprise a plurality of apertures along its outer periphery to aid in suspension of lighting apparatus 100. A power supply (not shown) is electrically coupled to wiring harness 110 at another end to power the plurality of LED arrangements 108.

Referring to FIGS. 3A and 3B, wiring harness 110 may be comprised of three (3) braided wires 130A-C (braided wire 130A exposed). Wire openings 132A-C may be provided along the length of wiring harness 110 to allow electrical access points to each of braided wires 130A-C. Lead wires 134A-C may be coupled at one terminating end to braided wires 130A-C via wire openings 132A-C. As illustrated in FIGS. 4A and 4B, a three-prong connector 140 may be provided at the opposing terminating end of lead wires 134A-C. Each three-prong connector 140 is adapted to plug-in to three-prong leads 142 provided at the end of each LED arrangement 108 encased in pockets 106 of body 102. It should be noted that the three braided wires 130A-C and three-prong connectors 140 described herein are provided by way of example, and not by way of limitation, and more or less electrically conductive wires (e.g., in solid core, stranded or braided form) and varying multi-pin connectors may be used to accommodate a particular LED arrangement envisioned for use in body 102.

As illustrated in FIG. 4B, adequate spacing is provided between each of pockets 106, thereby permitting body 102 to be folded or rolled up for ease of storage and transport. Having the same spacing corresponding to the spacing between each of pockets 106, as well as the use of braided wires 130A-C in the manner previously described, permits wiring harness 110 to be rolled up along with body 102. A partially and fully rolled up version of body 102 is illustrated, respectively, in FIGS. 5A and 5B.

Whereas many alterations and modifications of the present invention will no doubt become apparent to a person of ordinary skill in the art after having read the foregoing description, it is to be understood that any particular embodiment described and shown by way of illustration is in no way intended to be limiting. Therefore, references to details of various embodiments do not limit the scope of the claims, which in themselves recite only those features regarded as the invention.

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What is claimed is:

1. A lighting apparatus, comprising:

a blanket-like body having a plurality of pockets;

a detachable wiring harness having at least three separate
wiring channels and a plurality of three-prong connec-
tors, said wiring harness attached to said blanket-like
body, each of said wiring channels embodying an
electrically conductive wire coupled to a power source,
each of said wiring channels constructed with a plu-
rality of openings providing electrical access points
along the length of said wiring harness, and each
three-prong connector coupled to said electrically con-
ductive wire embodied in each of said three separate
wiring channels via said plurality of openings; and

a light emitting diode (LED) arrangement embodied
within each of said plurality of pockets, each said LED
arrangement electrically coupled to said power source
independent of another said LED arrangement via said
plurality of three-prong connectors.

2. The apparatus of claim 1, wherein said blanket-like
body is constructed of a durable material.

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3. The apparatus of claim 1, wherein said blanket-like
body is flexible.

4. The apparatus of claim 1, wherein said blanket-like
body is comprised of a plurality of apertures along its
periphery.

5. The apparatus of claim 1, wherein each of said plurality
of pockets are constructed of a clear plastic formed in the
shape of a tubular opening.

6. The apparatus of claim 1, wherein said LED arrange-
ment is a flexible LED ribbon.

7. The apparatus of claim 1, wherein said LED arrange-
ment is a rigid LED strip.

8. The apparatus of claim 1, wherein said LED arrange-
ment is slidably received and individually encased within
each of said plurality of pockets.

9. The apparatus of claim 1, wherein said blanket-like
body is constructed to permit said blanket body to be folded
or rolled up.

10. The apparatus of claim 1, further comprising a sus-
pension frame for suspending said blanket-like body.

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