



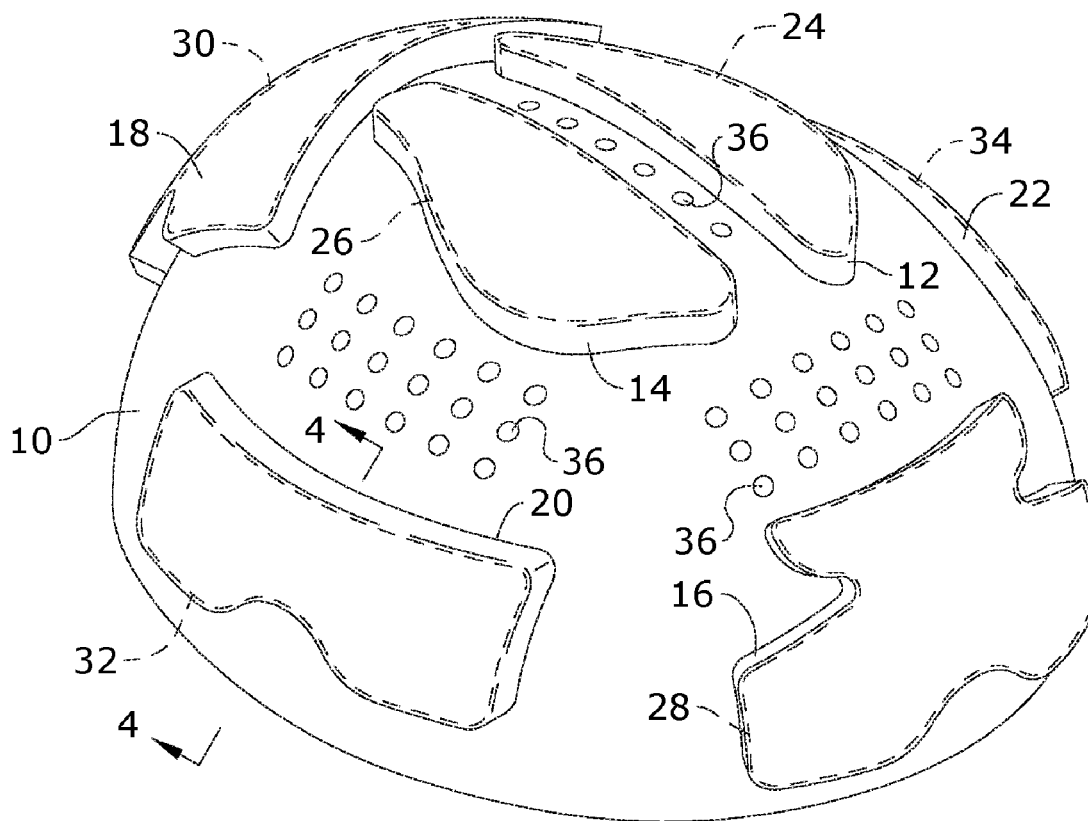
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(19) **United States**(12) **Patent Application Publication****Paige, SR.**(10) **Pub. No.: US 2018/0199653 A1**(43) **Pub. Date: Jul. 19, 2018**(54) **LIGHTWEIGHT PROTECTIVE HEADGEAR****Publication Classification**(71) Applicant: **Quentin Kelly Paige, SR.**, Largo, MD (US)(51) **Int. Cl.**
A42B 3/12 (2006.01)(72) Inventor: **Quentin Kelly Paige, SR.**, Largo, MD (US)(52) **U.S. Cl.**
CPC **A42B 3/125** (2013.01)(21) Appl. No.: **15/691,229**(22) Filed: **Aug. 30, 2017****Related U.S. Application Data**

(60) Provisional application No. 62/447,596, filed on Jan. 18, 2017.

(57) **ABSTRACT**

A light weight protective head gear has a crown covering fabric layer configured to cover an upper portion of the wearer's head. A plurality of spaced apart pads are disposed in a spaced apart relation over the crown portion. The fabric layer of the headgear may also include a fabric extension that may selectively be positioned to cover one or more of the wearer's ears, cheeks, chin, or neck. The plurality of pads may be secured to the fabric layer via a pocket, an adhesive, or a stitch.



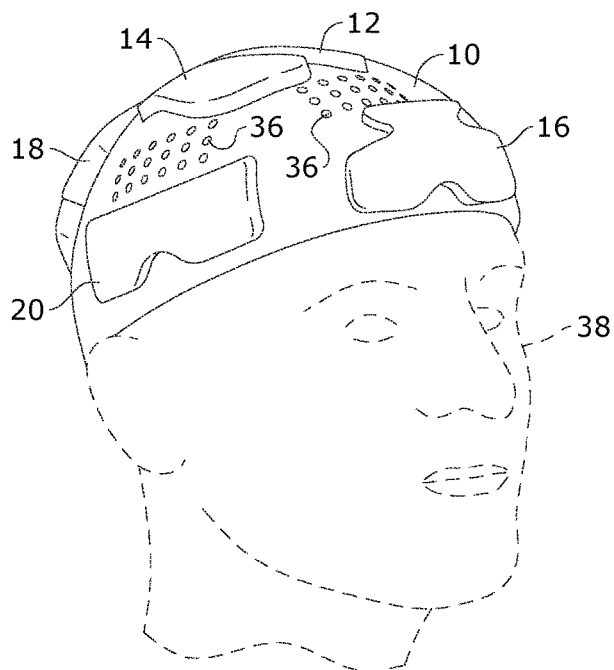


FIG. 1

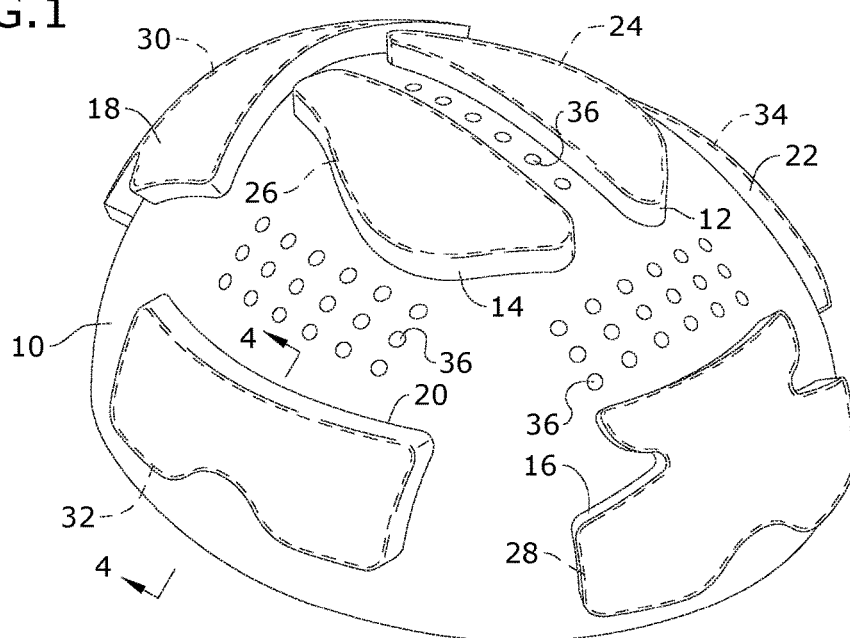


FIG. 2

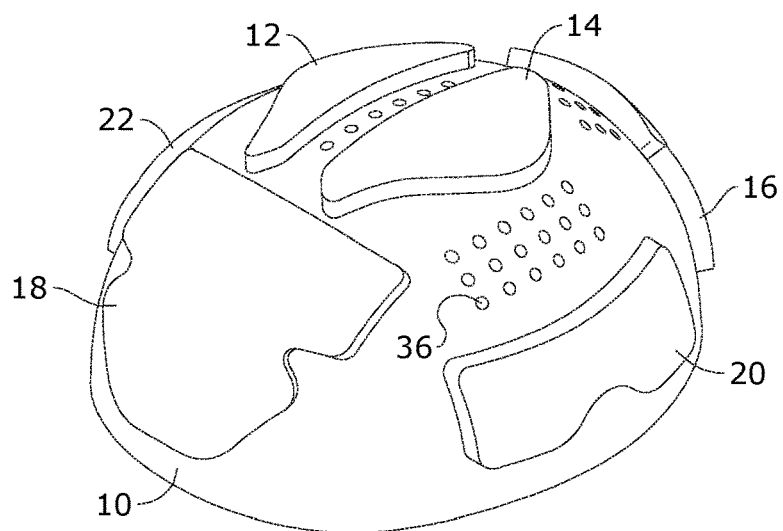


FIG.3

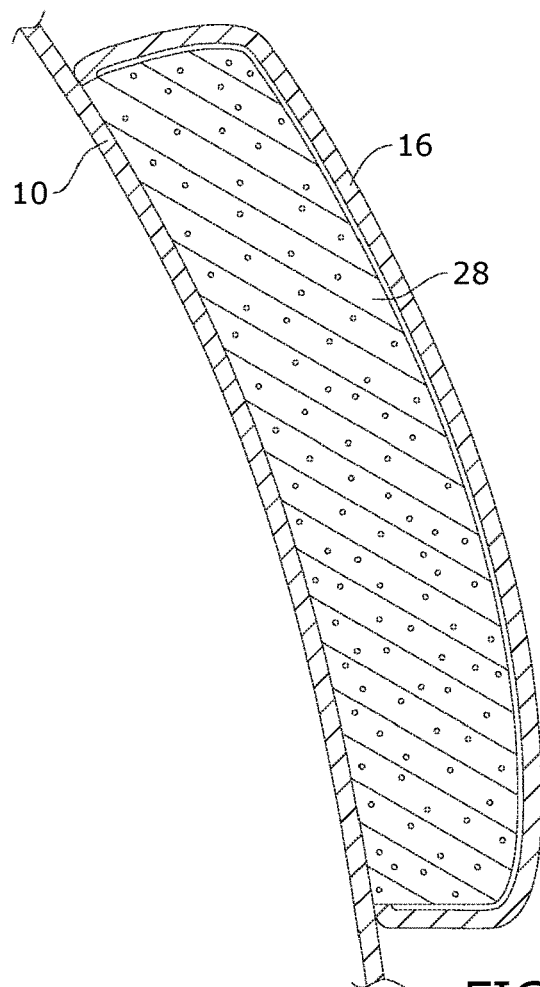


FIG.4

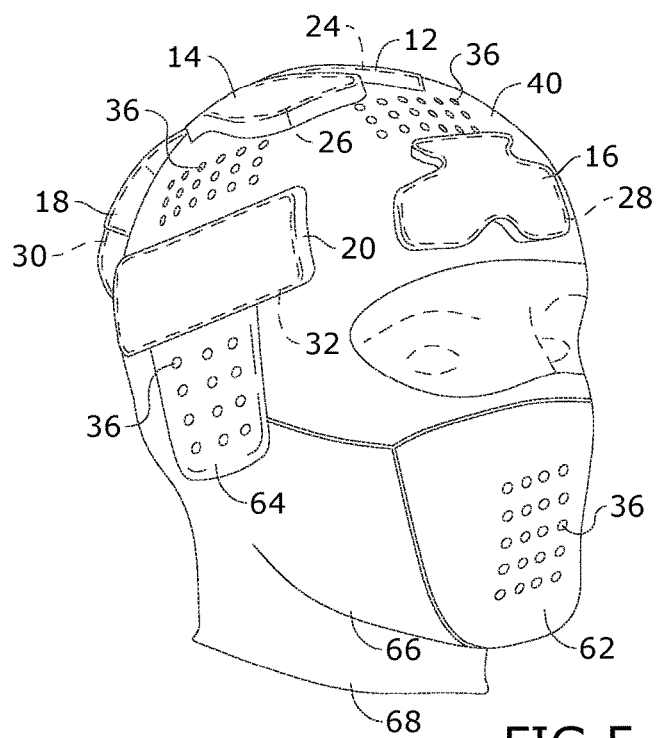


FIG.5

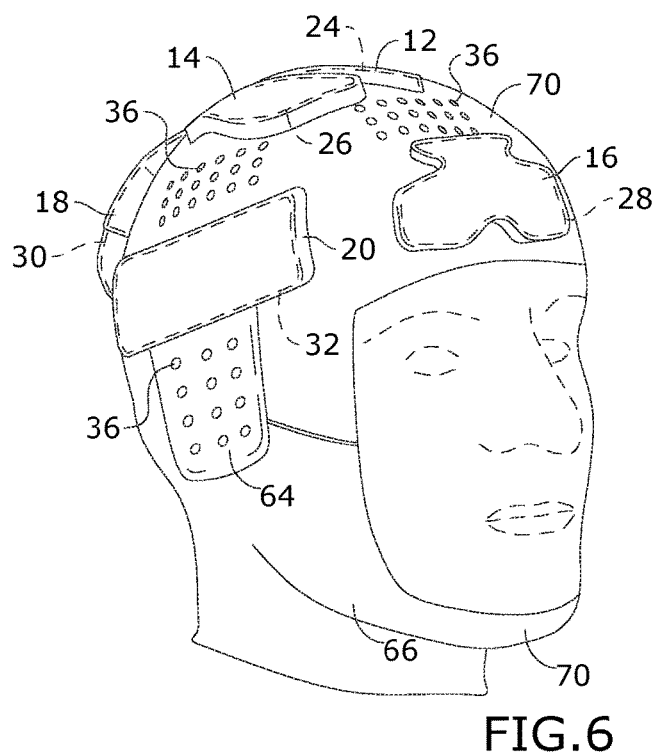


FIG.6

LIGHTWEIGHT PROTECTIVE HEADGEAR

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of priority of U.S. provisional application No. 62/447,596, filed Jan. 18, 2017, the contents of which are herein incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to headgear, and more particularly to protective headgear providing impact and weather protection for the wearer.

[0003] Currently in the art, there are a wide variety of items of protective headgear. The vast majority of these items that provide for impact protection include a heavy protective shell that may be supported on the wearer's head via pads secured to the interior of the shell or an even wider assortment of suspension systems. Certain soft impact protective headgear rely on a strap configuration to retain the headgear to the wearer's head. These factors introduce a level of discomfort such that the wearer may not always wear the headgear when required.

[0004] Similarly, conventional protective headgear is not generally designed to adapt to seasonal weather changes. Accordingly, the wearer may not wear the headgear when it becomes too hot. Alternatively, the wearer may use a thermal headgear that is incompatible with impact reducing properties the protective shell.

[0005] As can be seen, there is a need for an improved protective head that lightweight and is configurable for a variety of seasonal and weather requirements.

SUMMARY OF THE INVENTION

[0006] In one aspect of the present invention, a protective headgear, includes a fabric layer having a crown portion adapted to be fitted over an upper portion of wearer's head. A plurality of pads are secured in a spaced apart relation over the crown portion of the fabric layer. In some embodiments, a plurality of pockets are disposed in a spaced apart relation over the crown portion of the headgear. The plurality of pads are configured to be received in the plurality of pockets. The plurality of pads may also be secured to the fabric layer via an adhesive or via a stitch.

[0007] The plurality of pads may include at least one crown pad, a frontal pad, and a posterior pad. The plurality of pads may also include a left and a right lateral pad. The at least one crown pad may also include a left and a right crown pad.

[0008] In some embodiments, the fabric layer may also include an extensible portion configured to be selectively positioned over one or more of the wearer's ears, cheeks, chin, and mouth.

[0009] In other aspects of the invention, a lightweight protective headgear is formed with a fabric layer having a crown portion adapted to be fitted over an upper portion of wearer's head. A plurality of pockets are disposed in a spaced apart relation over the crown portion. The plurality of pockets are configured to receive one of a plurality of protective pads. The plurality of protective pads are received in the plurality of pockets.

[0010] The plurality of pockets may include at least one crown pocket, a frontal pocket, and a posterior pocket. The

plurality of pockets may further include a left and a right lateral pocket. The at least one crown pocket may include a left and a right crown pocket.

[0011] The fabric layer may be formed with an extensible portion configured to be selectively positioned over one or more of the wearer's ears, cheeks, chin, and mouth. The fabric layer is formed of a resilient material and may include one or more of a lightweight breathable fabric, a thermally insulated material, a flame retardant material, and a water repellent material.

[0012] In aspects, a liner for a protective helmet, includes a fabric layer having a crown portion adapted to be fitted over an upper portion of wearer's head and worn beneath the protective helmet and a plurality of pockets disposed in a spaced apart relation over the crown portion. The plurality of pockets are configured to receive one of a plurality of protective pads. The plurality of pockets may include at least one crown pocket; a frontal pocket, a posterior pocket, and a left and a right lateral pocket. The fabric layer for the liner may be one or more of a lightweight breathable fabric, a thermally insulated material, a flame retardant material, and a water repellent material.

[0013] These and other features, aspects and advantages of the present invention will become better understood with reference to the following drawings, description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a perspective view of an exemplary embodiment of a lightweight protective headgear, shown in use;

[0015] FIG. 2 is a perspective view of the lightweight protective headgear;

[0016] FIG. 3 is a rear perspective view of the lightweight protective headgear;

[0017] FIG. 4 is a section view of the lightweight protective headgear, taken along line 4-4 in FIG. 2;

[0018] FIG. 5 is a perspective view of an alternate embodiment of the lightweight protective headgear; and

[0019] FIG. 6 is a perspective view of an alternate embodiment of the lightweight protective headgear.

DETAILED DESCRIPTION OF THE INVENTION

[0020] The following detailed description is of the best currently contemplated modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention, since the scope of the invention is best defined by the appended claims.

[0021] Broadly, embodiments of the present invention provides a lightweight protective headgear adaptable to a variety of uses. The headgear provides the wearer impact protection and in certain embodiments may also provide an insulating layer for cold weather environments.

[0022] As seen in reference to FIGS. 1-6, the headgear includes a fabric layer 10 having a crown portion formed to fit the upper portion of the wearer's head 38. For warm weather use, the fabric layer 10 may be a lightweight breathable fabric with a plurality of pores 36 that permit the evaporation of sweat or other moisture that may be applied to the fabric for cooling. The fabric layer 10 should possess

an elasticity or resiliency to facilitate retention of the headgear on the wearer's head **38**.

[0023] For cold weather use, the fabric layer **10** may be selected from a variety of warm insulating materials, such as wool, cotton poly knits, fleece, and the like. In certain embodiments, the headgear may also include one or more extensible portions that may be configured to be drawn downwardly from the crown portion to provide an ear cover **64**, cheek cover **66**, neck cover **68**, or chin cover **70**. The fabric layer **10** may also be selected for use in special environments, including fire resistant materials, as a Nomex®, or water resistant materials, such as GoreTex®.

[0024] A plurality of pads are disposed in a spaced apart relation about the periphery of the crown portion. In some embodiments the plurality of pads are carried in one or more pockets such as a left and a right upper cranium pockets **12**, **14**, an anterior pocket **16**, a posterior pocket **18**, and a left and a right lateral pocket **20**, **22**. The selection, placement, and spacing of the pads being determined by the degree of impact protection required for the particular application, such as a particular sport, fire and rescue, construction, and the like. The plurality of pads may include one or more of a crown pad **24**, **26**, a frontal pad **28**, a posterior pad **30**, a left and a right lateral pads **32**, **34**. In some embodiments, the plurality of pads may include an ear pad **64** and a mouth pad **62**. In other embodiments, the plurality of pads may be secured to the fabric layer **10** via an adhesive or via stitching.

[0025] The protective headgear of the present invention may be utilized for a variety of purposes, including work, play, and numerous life activities. It may be used alone or in combination with other items of headgear such as a liner for a construction hard hat, a ballistic protective helmet, a motor sports helmet, and headgear for contact and non-contact sports, including a football helmet, a baseball cap or helmet, with world rugby helmets, a cycling helmets, and the like. The protective headgear of the present invention may also be utilized for special needs children.

[0026] It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

[0027] It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

What is claimed is:

1. A protective headgear, comprising:
a fabric layer having a crown portion adapted to be fitted over an upper portion of wearer's head; and
a plurality of pads secured in a spaced apart relation over the crown portion of the fabric layer.
2. The protective headgear of claim **1**, further comprising:
a plurality of pockets disposed in a spaced apart relation over the crown portion, wherein the plurality of pads are configured to be received in the plurality of pockets.
3. The protective headgear of claim **1**, wherein the plurality of pads are secured to the fabric layer via an adhesive.
4. The protective headgear of claim **1**, wherein the plurality of pads are secured to the fabric layer via a stitch.
5. The protective headgear of claim **1**, wherein the plurality of pads comprise:

at least one crown pad;
a frontal pad, and
a posterior pad.

6. The protective headgear of claim **5**, wherein the plurality of pads further comprise:
a left and a right lateral pad.

7. The protective headgear of claim **5**, wherein the at least one crown pad comprises a left and a right crown pad.

8. The protective headgear of claim **1**, wherein the fabric layer comprises an extensible portion configured to be selectively positioned over one or more of the wearer's ears, cheeks, chin, and mouth.

9. A lightweight protective headgear, comprising:

a fabric layer having a crown portion adapted to be fitted over an upper portion of wearer's head; and
a plurality of pockets disposed in a spaced apart relation over the crown portion, wherein the plurality of pockets are configured to receive one of a plurality of protective pads.

10. The protective headgear of claim **9**, wherein the plurality of protective pads are received in the plurality of pockets.

11. The protective headgear of claim **9**, wherein the plurality of pockets comprise:

at least one crown pocket;
a frontal pocket, and
a posterior pocket.

12. The protective headgear of claim **11**, wherein the plurality of pockets further comprise:
a left and a right lateral pocket.

13. The protective headgear of claim **12**, wherein the at least one crown pocket comprises a left and a right crown pocket.

14. The protective headgear of claim **13**, wherein the fabric layer comprises an extensible portion configured to be selectively positioned over one or more of the wearer's ears, cheeks, chin, and mouth.

15. The protective headgear of claim **14**, wherein the fabric layer comprises a resilient material.

16. The protective headgear of claim **14**, wherein the fabric layer comprises one or more of a lightweight breathable fabric, a thermally insulated material, a flame retardant material, and a water repellent material.

17. A liner for a protective helmet, comprising:

a fabric layer having a crown portion adapted to be fitted over an upper portion of wearer's head and worn beneath the protective helmet; and
a plurality of pockets disposed in a spaced apart relation over the crown portion, wherein the plurality of pockets are configured to receive one of a plurality of protective pads.

18. The liner of claim **17**, wherein the plurality of protective pads are received in the plurality of pockets.

19. The liner of claim **18**, wherein the plurality of pockets comprise:

at least one crown pocket; a frontal pocket, a posterior pocket, and a left and a right lateral pocket.

20. The liner of claim **17**, wherein the fabric layer comprises one or more of a lightweight breathable fabric, a thermally insulated material, a flame retardant material, and a water repellent material.

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