Aug. 21, 1962 P. H. CAINE 3,049,720

HEADGEAR

Filed June 20, 1960

FIG. 1.

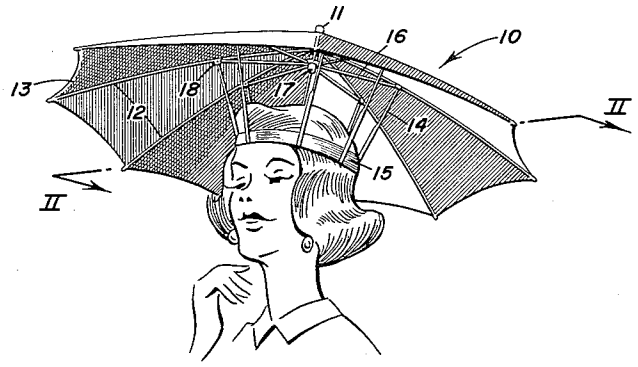
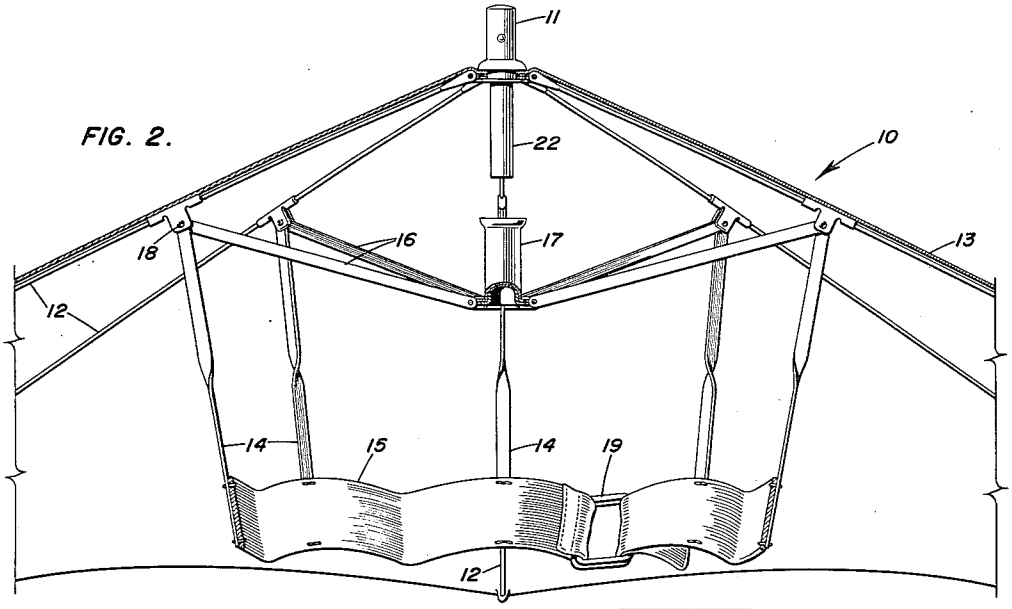


FIG. 2.



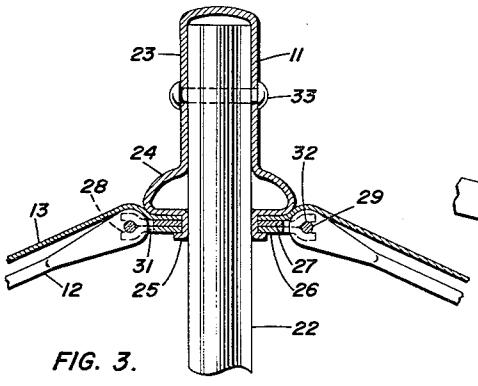


FIG. 3.

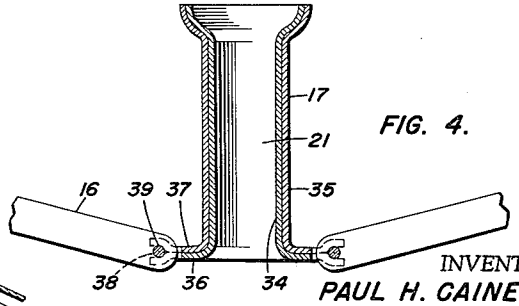


FIG. 4.

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HEADGEAR

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This invention relates to headgear and more particularly to apparatus arranged to protect a person from rain or sun.

In the past, many devices have been evolved for use in protecting one from the effect of rain or sun; some of these have involved the use of an umbrella-like device mounted on the head. All of these devices have suffered from one defect or another; most of them have been difficult to manufacture and have, therefore, been quite expensive. None of them has been readily foldable into a small, compact package when not in use; this last disadvantage is particularly important in the case of a golfer who wishes a very compact protection which may be stored in one of the pockets of his golf bag. These and other difficulties experienced with the prior art devices have been obviated in a novel manner by the present invention.

It is, therefore, an outstanding object of the invention to provide a headgear which may be attached to the head, thus leaving the hands free for activity while at the same time protecting a person from rain or sun.

Another object of this invention is the provision of a headgear of the type described which is inexpensive to manufacture and which is capable of a long life of useful service with a minimum of maintenance.

A further object of the present invention is the provision of a protective headgear which is readily adjustable to fit various sized heads.

It is another object of the instant invention to provide an umbrella-type headgear which is readily collapsed when not in use to form a small, easily-stored package.

With these and other objects in view, as will be apparent to those skilled in the art, the invention resides in the combination of parts set forth in the specification and covered by the claims appended hereto.

The character of the invention, however, may be best understood by reference to one of its structural forms, as illustrated by the accompanying drawings in which:

FIG. 1 is a perspective view of a headgear embodying the principles of the present invention;

FIG. 2 is a sectional view of the invention taken on the line II—II of FIG. 1;

FIG. 3 is an enlarged view of a portion of the invention, and

FIG. 4 is an enlarged sectional view of a portion of the invention.

Referring first to FIG. 1, wherein are best shown the general features of the invention, the headgear, indicated generally by the reference numeral 10, as shown as having a central hub 11 from which radiate eight ribs 12 on which a flexible cover 13 is mounted. Suspended from the ribs 12 by means of supporting rods 14 is an adjustable headband 15. Each rib 12 also has attached thereto one end of a brace 16, the other end of which is attached to a central ferrule 17.

FIG. 2 shows the construction of the device in somewhat greater detail. It can be seen that each of the ribs 12 is hingedly attached to the hub 11 and that each of the supporting rods 14 is hinged to an elongated pivot lug 18 located in the intermediate portion of the rib 12. The cover 13 is clamped at the hub, extends over the outer surfaces of the ribs 12, and is fastened at its outer periphery to the ends of the ribs 12. The lug 18 is formed of sheet metal as is each supporting rod 14. Each supporting rod 14 is pivoted to the lug 18 in a flat position in a general plane passing through the hub 11; the rod

is twisted at the lower portion, however, so that its flat sides are tangential to the circle of the headband 15, so that they lie against the headband and are sewn thereto. The band 15 is made of semi-elastic cloth and is provided with a double buckle 19 which consists of two steel loops or rings sewn into one end of the headband. The other end of the headband loops through the double buckle and is adjustable therein. Each of the braces 16 is also pivoted to the lug 18 on a rib and is pivotally connected to the ferrule 17, which, it may be seen, is provided with a central bore 21. A peg 22 is mounted in the hub 11 and extends downwardly into the apparatus for engagement with the bore 21.

FIG. 3 shows in greater detail the construction of the hub 11 and the associated equipment. The hub 11 is provided with a tubular portion 23 having an outer flange 24 which presses against the outer surface of the flexible cover 13 and is provided with an inner flange 25 which extends parallel to and spaced from the flange 24. Between the flanges 24 and 25 lie two washer-like hinge plates 26 and 27. The flanges 24 and 25 clamp the flexible cover 13 and the two hinge plates 26 and 27 tightly together. The outer peripheries of the hinge plates 26 and 27 are slightly deformed to provide a groove 28 extending entirely around their periphery and a wire 29 lies in the groove and extends around the periphery. The hinge plates 26 and 27 are slotted at their outer edges to receive flat ends of the ribs 12. The ribs 12 lie in these slots 31 and the wire 29 is threaded through an aperture 32 formed in the end of each rib. The ends of the wire are twisted together so that the wire forms a complete hoop and acts as a hinge pin for each of the ribs. The peg 22 lies within the tubular portion 23 and is locked in it by means of a rivet 33.

In FIG. 2 it can be seen that the ferrule 17 is hingedly attached to the brace 16 in much the same manner that the ribs 12 are attached to the hub 11. The ferrule consists of inner and outer tubular members 34 and 35 provided, respectively, with outwardly extending flanges 36 and 37. These flanges are formed with a bevel at their outer edges in a similar manner to the hinge plates 26 and 27 of the hub 11; that is to say, they are deformed at their outer peripheries to form an annular groove 38 and they are provided with eight slots to receive the flat braces 16. Each brace is provided with a suitable aperture at its end; a wire 39 is passed through these apertures and is twisted at its ends to form a complete circle which acts as a hinge pin for holding and locking the braces 16 to the ferrule. The inner and outer tubular members are fastened together by soldering or the like and the bore 21 of the ferrule is, of course, the inner surface of the inner tubular member 34.

The operation of the invention will now be readily understood in view of the above description. FIG. 1 shows the headgear completely opened and ready for use, while FIG. 2 shows it at an intermediate position between collapsed and opened condition. When it is desired to open the headgear the ribs 12 are moved outwardly from their collapsed positions in which positions they lie in a bundle similar to a collapsed umbrella. When the ribs 12 have been moved outwardly the ferrule 17 is moved toward the peg 22 and the peg 22 is inserted in the bore 21. The movement of the ferrule 17 toward the hub 11 causes the braces 16 to press against the lugs 18 and against the ribs 12 to move the ribs further and to stretch the flexible cover 13 around the ribs. Before the ferrule 17 has been moved to a final position completely overlying the peg 22, the braces reach a position in which they all lie in a common, generally-horizontal plane. A slight further movement of the ferrule onto the peg 22 causes the braces 16 to be slightly angular to one another on the side opposite the co-planar position and opposite that

which is shown in FIG. 2. This is a so-called "over-center" position in which the fabric 13, because of its inherent resilience, will act to hold the members locked together. As the ribs 12 are moved outwardly, the supporting rods 14 also move outwardly along with their hinged lug 18 and, when the apparatus is completely open, the supporting ribs 14 are located on a circle of lugs 18 which is substantially the same size as the circle formed by the open headband 15. The headband 15 is adjusted by means of the double buckle 18 and the apparatus is placed on the head of the user, thus protecting him from sun or rain. It will be understood that the flexible cover 13 would normally be made of cloth, but could very well be made of a water-proof plastic or any other flexible material. In order to collapse the device, the ferrule 17 is pulled away from the peg 22 and the ribs 12 are moved inwardly. In the final position when the ribs 12 have been hinged about the hub 11 until they lie generally parallel and close to one another, the supporting rods 14 will lie in a similar position each against its rib 12 and all of them in a compact bundle. In a similar manner, during the collapsing action, the ferrule 17 moves downwardly within the headband 15 until the braces 16 are close to and parallel to the supporting rods 14 and the ribs 12. The entire headgear in collapsed position forms a small bundle whose length is determined by the lengths of the ribs 12. Naturally, since the device is usually intended for covering the head and not for the whole body, the umbrella-like flexible cover will be considerably smaller than the conventional umbrella.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, however, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

The invention having been thus described, what is claimed as new and desired to secure by Letters Patent is:

I claim:

1. Headgear for protection from sun or rain, comprising an adjustable headband adapted to be fitted to the head, a plurality of ribs, a hub to which the ribs are hingedly connected, a flexible cover extending from the hub over the ribs in a generally umbrella-like configuration, a peg extending from the hub, an elongated ferrule adapted to fit over the peg and entirely separable therefrom, braces each hingedly attached at one end to the ferrule and at the other end to an intermediate part of a rib, and supporting rods each hingedly connected at one end to the said intermediate part of a rib and attached at the other end to the headband, the braces being of such a length that, as the ferrule is moved toward the peg, the ribs are moved outwardly from one another and the flexible cover is stretched tightly over the ribs, and so that, when the ferrule lies on the peg, the braces are held in an over-center position.

2. Headgear for protection from sun or rain, comprising an adjustable headband adapted to be fitted to the head, a plurality of ribs, a hub to which the ribs are hingedly connected, a flexible cover extending from the hub over the ribs in a generally umbrella-like configuration, a peg extending from the hub, an elongated ferrule adapted to fit over the peg and entirely separable therefrom, braces each hingedly attached at one end to the ferrule and at the other end to an intermediate part of a rib, and supporting rods each hingedly connected at one end to the said intermediate part of a rib and attached at the other end to the headband, the hub consisting of two flanged members fastened together to form a peripheral groove, a plurality of radial slots extending inwardly into the said periphery, the end of a rib lying in each slot, an aperture in each rib end, and a length of wire extending around the groove through each of the apertures.

3. Headgear for protection from sun or rain, comprising an adjustable head band adapted to be fitted to the head, a plurality of ribs, a hub to which the ribs are hingedly connected, a flexible cover extending from the hub over the ribs in a generally umbrella-like configuration, a peg extending from the hub, an elongated ferrule adapted to put over the peg and entirely separable therefrom, braces hingedly attached at one end to the ferrule and at the other end to an intermediate part of the rib, and supporting rods each hingedly connected at one end to the said intermediate part of a rib and attached at the other end to the headband, the ferrule consisting of two flanged members fastened together to form a peripheral groove, a plurality of radial slots extending inwardly into the said periphery, the end of a brace lying in each slot, an aperture in each brace end, and a length of wire extending around the groove to each of the apertures.

4. Headgear for protection from sun or rain, comprising an adjustable band adapted to be fitted to the head, a plurality of ribs, a hub to which the ribs are hingedly connected, a flexible cover extending from the hub over the ribs in a generally umbrella-like configuration, a peg extending from the hub, an elongated ferrule adapted to fit over the peg and entirely separable therefrom, braces each hingedly attached at one end to the ferrule and the other end to an intermediate part of the rib, and supporting rods each hingedly connected at one end to the said intermediate part of a rib and attached at the other end to the headband, the hub and the ferrule each consisting of two disk-like members fastened together and deformed to form a peripheral groove, a plurality of radial slots extending inwardly into the periphery of each of the disk-like members, the end of the rib lying in each slot of the hub and the end of a brace lying in each slot of the ferrule, an aperture in each of the said ends, and the length of wire extending around each of the grooves through all of the apertures.

5. Headgear for protection from sun or rain, comprising an adjustable band adapted to be fitted to the head, a plurality of ribs, a hub to which the ribs are hingedly connected, a flexible cover extending from the hub over the ribs in generally umbrella-like configuration, a peg extending from the hub, an elongated ferrule adapted to fit over the peg and entirely separable therefrom, braces each hingedly attached at one end to the ferrule and at the other end to an intermediate part of the rib, and supporting rods each hingedly connected at one end to the said intermediate part of a rib and attached at the other end to the headband, the braces being of such a length that as the ferrule is moved toward the peg, the ribs are moved outwardly from one another and the flexible cover is stretched tightly over the ribs, when the ferrule lies on the peg, the braces are held in an over-center position, the hub and ferrule each consisting of two flanged members fastened together and deformed to form a peripheral groove around each pair, a plurality of radial slots extending inwardly into the periphery of the hub on the brace, the end of a rib lying in each slot of the hub and the end of a brace lying in each slot of the ferrule, an aperture in each of the said ends of the ribs and braces, and a length of wire extending around the groove through each of the apertures.

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