This invention relates to safety helmets for protecting the head of the wearer who may be engaged in various activities where protection is required, such for example as in football, automotive racing, or even in the case of mill or construction workers.

As is well known, the helmet comprises an outer shell, usually of light molded material and requires an interior lining to comfortably hold the shell in place and also to absorb the shock of blows or impact with other objects.

The shell usually outlasts the interior structure which in many cases, is used by several different persons. For sanitary reasons and comfort, it is desirable to make the inner lining, which usually includes a sweat band, detachable. The lining alone, however, is not sufficient to protect the important areas of the head from as much shock or as many blows as possible.

Accordingly, the present invention has primarily in view a prefabricated integrated two-part lining assembly which may be readily snapped in place within the shell and readily removed. One element of this assembly includes a reticulated or cage-like series of tapes including a horizontal two-ply sweat band and vertically disposed strips of fabric webbing secured to the outer ply and adjustably looped about a crown piece having a central opening. These strips may be made adjustable to enable the unit to be placed in helmets of different depth. The other element of the assembly is in the form of a reticulated foam rubber cushion including a compressible locking plug to enter said opening in the crown piece and a plurality of spaced leg portions having trident shaped ends to detachably interlock with the sweat band.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, hereinafter more fully described, illustrated, and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawing, in which:

FIG. 1 is a side elevation of the improved liner unit.
FIG. 2 is a top plan view.
FIG. 3 is a partial bottom plan view.
FIG. 4 is a fragmentary perspective view of a portion of the cushion element to better show the trident end of one of the spaced cushion arms.
FIG. 5 is a detail cross sectional view taken on the line 5-5 of FIG. 2.
FIG. 6 is a view illustrating the application of the invention.

Similar reference characters designate corresponding parts throughout the several figures of the drawing.

As will be seen from the drawing, the liner assembly includes as a first element the cage-like webbing or reticulated webbing having an annular two-ply sweat band and including an inner ply 1 and an outer ply 2, the same being connected as for example by stitching together at regular intervals, as shown at 3, thereby to provide a series of pockets 4. At the middle portion of each pocket there is secured to the outer ply 2 by a threaded nut receiving grommet 5 or the like, a series of vertical cotton webbing strips 6 whose upper ends are looped through the slots 7 in a suitable backing 8.

The vertical strips 6 are provided with a series of separable snap fasteners 6a in order to make them longitudinally adjustable when desired. In other words, by lengthening or shortening the strips 6 through re-positioning the fasteners 6a, it is possible to change the distance between the disc 8 and the two-ply sweat band 1-2.

The disc 8 is surmounted by a cushion 9 having peripheral recesses 8a to receive the portions of the vertical strips which project through the slots 7 and has a central opening 9 intended to receive the plug portion 10 of an inner foam rubber spider-like or reticulated cushion designated generally as 11, which constitutes the second element of the assembly. The body portion of the cushion 11 having the plug 10 is detachably interlocked with the opening 9 of the disc 8, and is also provided with a plurality of radially disposed arms 12 each having trident shaped terminal portions 13, which provide separate fingers to detachably interlock with the sweat band.

The arms 12 parallel the inner side portions of the strips 6 and the trident terminal portions include a medial prong 14 which fits into and engages with the pockets 4 between the inner and outer plys 1 and 2 of the sweat band while the outer prongs 15 engage and overlie the outer sides of the outer ply 2.

The cushion lining 11 of sponge rubber has a crown perforated for ventilation, medially provided with a compressible locking plug 16 which fits into the opening 9 of the leather disc 8 while the arms 12 cover or mask completely the inner faces of the vertical webbing strips 6 when the trident terminal portions are detachably interlocked with the outer ply 2 as shown in FIGS. 1-3 inclusive.

When it is desired to sanitize both elements of the entire two-part liner assembly, it is readily detached from the shell 5 of the helmet. That is to say, the foam rubber cushion 11, 12, 13, 14, 15 is detached from the disc 8 by pushing the plug 10 through the opening 9. The trident shaped terminal portions of the cushion may be readily disengaged from the two-ply sweat band by simply lifting the medial portion of each arm 12 to pull its center prong 14 out of its related pocket 4 and at the same time sliding the outer prongs 15 across the face of the outer ply 2 of the sweat band. When all of the trident end portions are disconnected from their related portions of the sweat band, then the entire cushion can be removed and a new one substituted when desired.

As previously indicated, the outer ply 2 of the sweat band is provided with a grommet 5 or the like intended to receive a threaded nut, not shown. This nut cooperates with a threaded screw, also not shown, piercing the shell at an appropriate point and having its slotted head exposed at the surface thereof. When removing the sweat band from the shell, the screw is removed from the nut and the shank of the screw releases the grommet 5 to permit removal of the entire reticulated webbing. In replacing the sweat band, this procedure is reversed.

I claim:
1. A detachable liner for helmet, including, an outer cage-like member constituting one element of said liner and comprising an annular two-ply sweat band and a plurality of vertical strips having free ends, one of which is connected to said two-ply band, means connecting said plies at opposite sides of the vertical strips to form pockets, said fasteners on said strips, a disc on said cage-like member having a central opening and also having peripherally disposed slots to adjustably receive the other of said free ends of the strips having complementary snap fastener parts, and an inner spider-like foam rubber cushion constituting the other element of said liner, said cushion including a plug detachably interlocking with the edge of the central opening in the disc and having a plurality of spaced arms provided with terminal trident portions, the medial prong of said trident portions
detachably fitting in said pockets between the spaced plies of the sweat band and the outer prongs of the trident fitting over the outer ply of the sweat band adjacent the vertical strips, thereby to interlock the cushion with the said cage-like member.

2. A detachable liner for helmets according to claim 1, wherein the disc is surrounded by a flat cushion having peripheral recesses to receive the portions of the vertical strips looped through the slots.

3. A detachable liner for helmets, comprising,
a disc having a central opening and slots adjacent the periphery thereof,
an outer reticulated member including a plurality of laterally-spaced vertical members each having an upper end looped through said slots and including fastening means thereon, a plurality of cooperating fastening means on the medial portion of said vertical members, said first fastening means selectively engaging one of said cooperating fastening means, whereby the lower end of each vertical member may be adjustably positioned relative to the disc,
a two-ply sweat band connected to the adjustable ends of said vertically spaced members, the plies of said sweat band being connected at spaced intervals to provide pockets,
an inner reticulated cushion including a crown portion engaging the bottom face of the disc,
and a plurality of spaced strips connected with said crown portion and each having free ends including a medial portion and two adjacent side portions, said medial portions each engaging in a related pocket of the sweat band while said adjacent side portions engage the outer face of said sweat band at either side of said pockets.

4. A two-part liner unit for helmet shells, wherein, the liner parts are constructed for joint or individual removal from the shell, including,
an outer member adapted to fit the head of the wearer and provided with a sweat band formed at spaced intervals with pockets,
and an inner member nested within the outer member and detachably connected thereto, said inner member including a plurality of depending elements, each of said elements including a medial finger and two adjacent side fingers, said medial fingers each detachably entering a related pocket of the sweat band while said adjacent side fingers engage the outer face of said sweat band at either side of said pockets releasably to hold the liner parts in telescopic nested relation and also to prevent relative angular movement therebetween.

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