Jan. 26, 1932. A. J. TURNER 1,842,953

FOOTBALL HELMET

Filed Feb. 15, 1930

Fig. 1

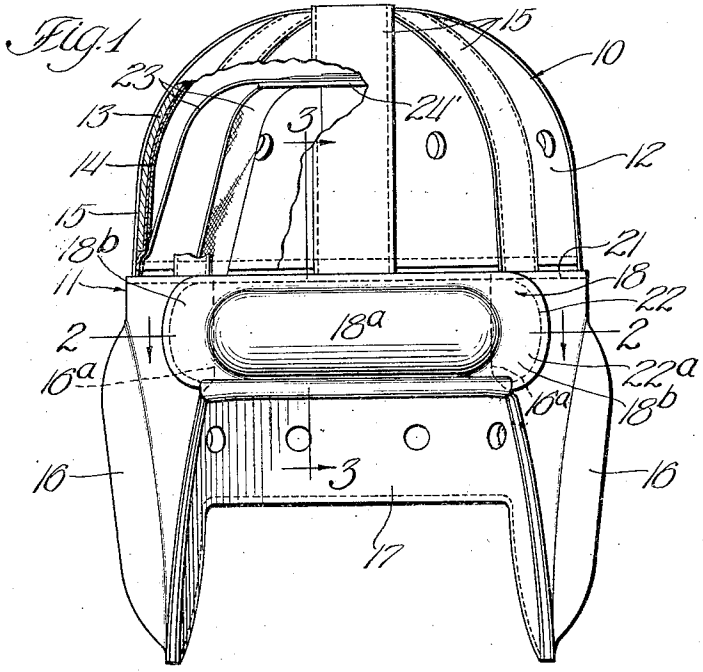


Fig. 2

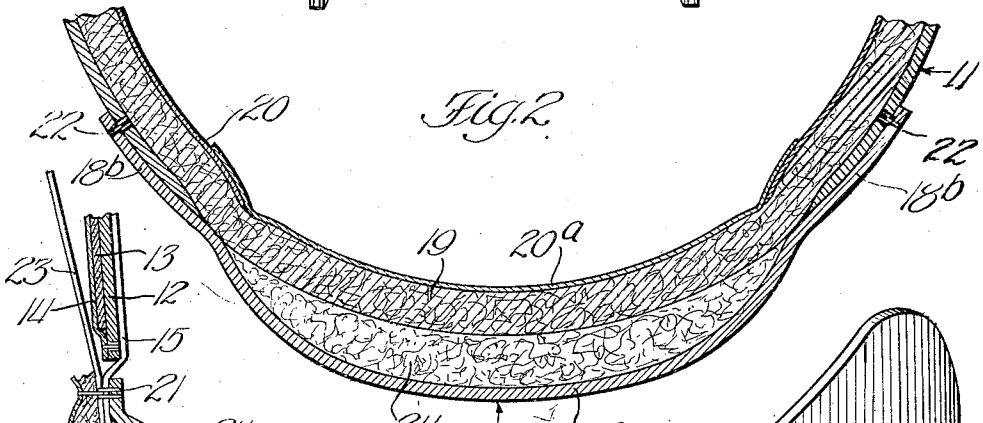
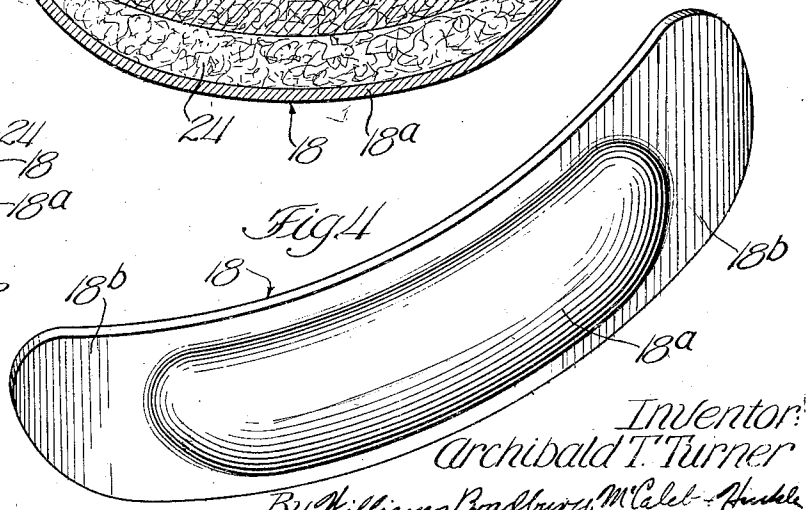


Fig. 3

Fig. 4



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UNITED STATES PATENT OFFICE

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FOOTBALL HELMET

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My invention relates to protective helmets, especially of the type used by football players, and concerns improvements in the construction of the helmet at the region of the forehead.

Among the objects of my improved construction are: a salient bumper to help keep objects from hitting the wearer's face; semi-rigidity for the region of the forehead; distributing the strain of an impact at the forehead over a relatively large area; additional thickness of padding across the forehead without sacrifice of a neat appearing stream line exterior; a convenient finger grip for quickly pulling the helmet on or off the head; and prevention of buckling of the forehead strip under strain of the inner crown suspension strap.

These and other objects, features and advantages of my invention are set forth in the following description of a preferred embodiment thereof, as illustrated in the accompanying drawings, wherein

Fig. 1 is a front elevation of a helmet embodying my invention;

Fig. 2 is a plan section on the line 2—2 of Fig. 1 showing the forehead construction;

Fig. 3 is a vertical section of the forehead construction taken on the line 3—3 of Fig. 1; and

Fig. 4 is a perspective detail of the outer forehead reinforcing member of my invention.

The helmet consists in general of a crown portion 10 and a band portion 11 there-beneath. The crown portion 10 comprises a heavy leather covering 12 on a bowl shaped reinforcing core 13, preferably of fiber, a soft leather inner lining 14, and a plurality of straps 15 arranged meridian-wise on the exterior of the crown portion and protruding there-below for attachment to the band portion 11.

The band portion 11 comprises usual ear flaps or extensions 16 with a relatively deep inter-connecting back portion 17. The front of the band portion between the ear flaps is relatively shallow. The leather cover pieces for the ear flap 16 may terminate at the forehead as at 16*a* and are bridged by a forehead piece 18. The entire band portion 11, as indicated in Fig. 2, is preferably lined with a thick layer of resilient felt 19 and interlined with a soft leather lining 20. The line of stitching 21 at the upper edge of the band portion 18 by which the component layers are held together also passes through the depending ends of the several straps 15 as shown in Fig. 3. The crown portion is thus left independent of the band portion 11, and spaced slightly there-above, except for the attachment through the straps 15.

In the better grade of helmets of the class described, a crown suspension is preferably employed whereby the head is spaced away from the crown of the helmet. This is done by a plurality of straps 23 usually of webbing emanating meridian-wise from an upper central leather disc 24′, after the fashion of the outer straps 15, but free of the helmet. As here shown, they are disposed opposite the straps 15, but of course on the inside of the helmet. The lower edges of these straps are secured to the base portion 11 by including them in the stitching 21 along with the depending edges of the strap 15, as shown in Fig. 3. The central leather disc 24′ is spaced some distance below the inside of the crown proper so that the wearer's head is held out of contact with the crown of the helmet by a safe margin.

The helmet thus far described is of standard construction. The forehead piece 18 of my invention comprises a strip or shell of relatively stiff leather, preferably that known in the trade as strap leather. The elongated central portion of the strip is pressed outwardly as a semi-cylindrical rib 18*a*, leaving a flat margin 18*b*. The upper margin of the strip is included in the stitching 21 along the upper edge of the band portion 11. The lower margin is secured to the lower edge of the forehead portion of the layer of felt 19 by a line of stitching 22 which extends upwardly at the respective ends of the strip as indicated at 22*a* to anchor it to the foreward edges of the ear portions 16. At the lower edge of the forehead member 18 the stitching 22 also includes a soft leather lining 20*a* which, as shown in Fig. 3, is turned back upon itself at

the stitching 22, brought around the lower edge of the forehead portion of the felt layer 19 and upwardly of the rear thereof and caught by the upper stitching 21. This forms a comfortable rounded protective covering for the lower edge of the forehead piece.

The hollow formed by the forwardly embossed portion 18*a* of the forehead strip is preferably filled with a supplemental layer of felt 24.

The forward embossing 18*a* on the forehead piece 18 is preferably formed by a suitable die. The leather is preferably of such stiffness that when thus embossed the piece has considerable rigidity and tends to hold its contour.

The outwardly extending rib across the forehead formed by the outwardly embossed portion 18*a* constitutes a bumper or guard tending to absorb the blow of any objects encountered and, by its protrusion beyond the plane of the face, protecting the latter from many injuries to which it might be subjected if, for example, the forehead piece 18 were a flat strip.

When the forehead piece 18 is stitched down in place the embossed rib 18*a* so reinforces it that it becomes semi-rigid. This semi-rigidity is augmented by the filler felt 24 in its hollow, which tends to prevent the flattening out of the stiffening rib. The forehead piece 18 is nevertheless flexible to conform itself to the contour of the wearer's forehead and to give sufficiently to permit the felt filler 24 and the felt layer 19 to cushion and absorb the blow. The protrusion of the stiffening rib 18*a* not only tends to keep objects from hitting the wearer's face, but also, because it is outstanding, tends to catch impacts so that they will be absorbed by the extra cushioning of the forehead piece rather than by less cushioned portions of the helmet.

My forehead piece 18 also serves to distribute over the entire forehead any blow received, so that the wearer does not suffer the injuries he would by a localized impact. Any blow on the embossed rib 18*a* is transferred to the wearer's forehead partly through the cushioning felt layers 24 and 19 and also partly through the flat margins 18*b*, which by their distributed area dissipate the acuteness of the impact.

The rib-like forward embossing 18*a* of my forehead piece, by providing a hollow for the felt filler 24, provides space for additional cushioning felt without leaving relatively thick patch-like edges. The desired stream line effect for the helmet is retained. In the form shown the edges presented by the forehead piece are reduced to the thickness of the leather of the member 18, and if I were to sacrifice the economies of cutting, I could eliminate even this edge by making the forehead piece an integral portion of the leather ear flap 16.

The protruding rib 18*a* of my forehead piece also forms an ample and convenient finger or hand grip for pulling the helmet on and off the wearer's head. This is especially advantageous when, as is often the practice, the player, for better vision or hearing in the heat of play, wants to remove his helmet instantly. The lower side of the rib may then conveniently be caught by the heel of the hand without danger of slipping from mud or water often accumulated on the surface of the helmet.

The embossed rib 18*a* of my forehead piece is also of advantage in association with the usual inner crown suspension. The fabric straps 23 therefor, as previously explained, are anchored to the upper edge of the band portion 11 by the stitching 21. Except across the forehead, the band portion 11 is of considerable depth not only at the ear flap 16 but at the back portion 17. Across the forehead, however, the band portion 11 is relatively shallow. The forward crown suspension strap 23 is anchored to the upper edge of the mid portion of this shallow forehead piece 18. The forehead piece 18 must necessarily be relatively shallow in order not to come down too near the eyes. When a downward blow on the top of the crown is received, the crown presses down on the top edge of the band portion 11, which in turn pulls downwardly on the several straps 23, distributing the strain quite evenly over the head. This inner crown suspension is calculated to maintain a free space between the straps and the crown, thereby keeping the wearer's head out of direct contact with the crown. This inner crown suspension depends for its success on the firm anchorage of each of the straps on the band portion 11.

Unless the narrow forehead piece 18 to which the forward strap 23 is anchored, were stiffened to prevent buckling, it would yield upwardly, letting the strap move upwardly, and as a result permit the head to come in contact with the crown. Not only would this fail adequately to protect the wearer's head against impact, but would soon destroy the self-adjusting feature of the crown suspension in fitting the helmet to the head. But the stiffening rib 18*a*, which I emboss in my forehead piece 18, reinforces and stiffens the latter against upward or outward buckling, and bridges between the deep ear flap 16 so that the forward strap 23 is adequately anchored.

Having thus described a preferred embodiment of my invention, what I claim is:

1. A football helmet comprising a crown portion, a band portion relatively deep at the back and sides and relatively shallow across the forehead, faced with leather or the like, an inner crown suspension comprising a plu-

rality of straps emanating meridian-wise from beneath the inside of the crown and anchored at their lower ends to the band portion, one of said straps being anchored to the band portion by the forehead piece, and means for preventing buckling of the latter under the pull of said straps, comprising an outwardly embossed stiffening rib formed in the leather facing of the forehead piece.

2. A football helmet comprising a crown portion, a band portion shallow across the forehead, strap means interconnecting the crown and band portions at spaced intervals, an inner crown suspension comprising a plurality of straps emanating meridian-wise from beneath the inside of the crown portion, but independent thereof, and anchored at their lower ends to the band portion, one of said straps being anchored to the band portion at the forehead piece, and a padded reinforcement forwardly secured to the forehead piece within the elevation thereof for preventing buckling of the forehead piece under the pull of said crown suspension strap, said reinforcement comprising a strip of relatively stiff leather having an elongated central portion pressed forwardly thereof, forming a semi-cylindrical rib extending only the length of said shallow band portion.

In witness whereof I hereunto subscribe my name this 8th day of February, 1930.

ARCHIBALD J. TURNER.