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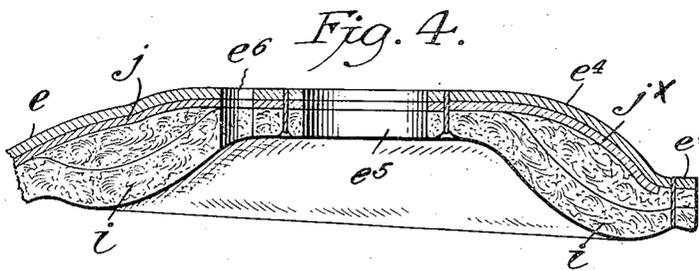
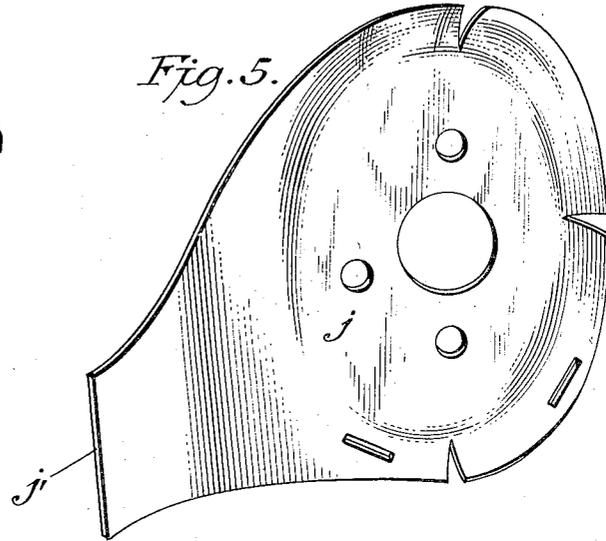
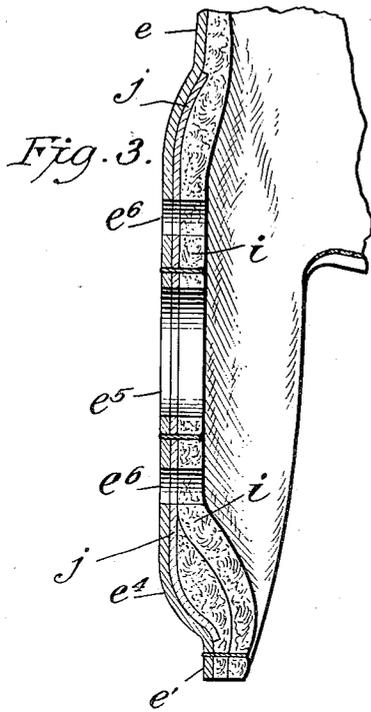
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HELMET

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# UNITED STATES PATENT OFFICE.

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## HELMET.

Application filed June 18, 1926. Serial No. 116,810.

This invention relates to head protective devices. More particularly the invention relates to helmets for use in games, such as football, and has for its object a helmet which shall afford a degree of protection to the wearer greater than usual in a structure having certain advantageous features from the standpoint of ease and comfort without diminishing to any extent the protection afforded. In accordance with the invention there is associated with a helmet a non-pliable protective enclosure for the major portion of the wearer's head and face which is ordinarily exposed with present day athletic helmets. More specifically there is provided a unitary stiff leather guard of generally cylindrical form affording protection to the wearer's face above the mouth, ears and the back of the head down to the nape of the neck which is permanently secured to a helmet of conventional lines with provision for a degree of relative movement therebetween and displacement of the guard under conditions of rough usage is prevented by means such as elastic straps, about the throat and neck. In order that the invention may be clearly understood and readily carried into effect the same will now be described more fully with reference to the accompanying drawings illustrating a preferred embodiment thereof, in which:

Figure 1 is a view in elevation showing the helmet looking from the front and illustrating the manner of forming the face and ear guard portions.

Figure 2 is a vertical longitudinal sectional view taken in the median plane of the helmet and showing details of construction.

Figure 3 is a vertical sectional view taken in the plane indicated by the line 3—3 in Figure 2, looking in the direction of the arrows and showing a novel re-enforcing element of pressed fibre for the ear piece.

Figure 4 is a horizontal sectional view taken in the plane indicated by the line 4—4 in Figure 2 and showing the fibre ear re-enforcing element which is pressed to a shape complementary to the shape of the ear.

Figure 5 is a view showing the fibre ear re-enforcement in perspective.

Referring to the drawings a heavy stiff leather top  $a$  which may take any convenient form is illustrated as protecting the head above the ears. This is conveniently formed in quarters  $a'$  secured together in non-yielding relation by means of stiff straps  $a^2$ . Inwardly the cap piece  $a$  may be cushioned with a layer of felt  $b$  or the equivalent and, if desired, may be re-enforced with a papier-mâché or other fibre re-enforcement  $c$ . The interior is ventilated by apertures  $a^3$ . In order to cushion the head still further from blows upon the head guard it is proposed to support the helmet from the top of the head by means of a pliable cap  $d$  formed in the present instance of a plurality of fabric straps  $d'$  secured at their lower ends  $d^2$  to the lower edge of the guard  $a$ . These straps cross one another at their central upper portion  $d^3$  where they are secured together. They are of such length as to bring the point  $d^3$  considerably below the top of the helmet thus maintaining at all times a space between the top of the head and the leather guard. So much of the helmet is substantially well known and it has also been proposed to associate with such helmet stiff leather ear guards. The present invention goes a step further, however, and provides a rigid protecting device which guards both the face and nose and the back of the head as well as the ears in a structure which is so formed as to resist shocks applied thereto. To this end a substantially cylindrical stiff leather guard  $e$  is secured to the cap  $a$  by means of straps or hinge elements  $f$  whereby a slight degree of flexibility is permitted in the joint between the two. The lower ends  $a^4$  of the overlapping portions  $a^2$  may be availed of as these straps hinges to which the guard  $e$  may be secured so as to leave a slight space  $g$  in the interest of flexibility of the joint. To facilitate manufacture the side pieces  $e'$  are secured together at the central median line at the back of the head and forwardly are joined to a formed leather nose guard  $e^2$  and to the frontal piece  $e^3$  to form the face covering portions. The nose guard section  $e^2$  and the side pieces  $e'$  are cut away to provide eye apertures  $h$  as shown. The side pieces  $e'$  may also be deflected outwardly as at  $e^4$  to space still further the stiff leather outer covering from the ear and this outwardly pressed portion may, if desired, be

provided with an opening  $e^5$  through which sounds may reach the ear and ventilating ports  $e^6$ . Inwardly the guard may be lined with a facing of felt  $i$  or the like.

5 Under some conditions the material of which the guard is composed will be found sufficient to resist and cushion blows upon the outside, particularly in view of the generally cylindrical form of the guard. In  
10 some situations, however, it will be found advisable to re-enforce the guard at critical points with a strengthening element as illustrated in the preferred embodiment of the invention. Accordingly a pressed fibre  
15 form  $j$  is disposed within the side portions  $e'$  to re-enforce that part around each ear as indicated in dotted lines and the front end thereof is brought forward to strengthen the face portion and terminates at approximately the line indicated at  $j'$ . This re-enforcing element possesses certain novel characteristics which render it peculiarly applicable in any ear protective device. It is pressed to conform to the shape of the ear as will be apparent from an inspection of  
25 Figures 3 to 5. That is it is most deeply depressed or indented rearwardly as at  $j^*$ , since that portion of the ear is always farthest spaced from the head. The nose guard is similarly re-enforced preferably by means  
30 of an aluminium re-enforcement  $k$  which extends rearwardly over the cheeks to approximately the point indicated by the dotted line  $k'$ . The end of the side shield  $j$  and the nose re-enforcement  $k$  thus do not overlap. They are sufficiently proximate to lend the desired degree of rigidity to resist blows but at the same time afford a slight degree of flexibility in the interest of convenience  
40 and comfort. The re-enforcements lie within the lining as shown.

It is particularly desirable, of course, to cushion or protect the forehead from blows. The present helmet lends itself particularly  
45 to this feature and to this end additional padding  $i'$  may be disposed above the eye apertures  $h$  and maintained in position by a leather covering  $l$ .

In order to prevent displacement of the helmet as a whole, particularly at times of  
50 rough usage an elastic strap  $m$  is provided

adapted to pass about the wearer's throat. A second strap  $n$  may also be provided passing about the nape of the neck as will be understood.

By the construction described a protective device is provided which not only affords maximum protection to the upper portion of the skull, but to the face above the mouth, ears and back of the head as well. The substantially cylindrical protector affords material resistance to blows because of its form and lends itself to additional re-enforcement and/or suitable cushioning at salient points. By its articulated joint and by the securing  
65 means it is securely held in position on the head of the wearer without discomfort.

Various modifications may be made in the composition and configuration of the component elements going to make up the protective devices as a whole without departing from the spirit and scope of the invention and no limitation is intended by the phraseology of the preceding description or accompanying illustrations except as indicated in  
75 the appended claims.

What we claim is:

1. In a protective device, the combination with a head guard, of a protector for the face, ears and back of the head comprising a relatively stiff outer covering of leather, a metallic re-enforcement for the nose portion, fibrous re-enforcements for the cheek bone and ear portions and an inner layer of felt padding.

2. In a protective device, the combination with a head guard, of a protector for the face, ears and back of the head comprising a relatively stiff outer covering of leather, a metallic re-enforcement for the nose portion, fibrous re-enforcements for the cheek bone and ear portions, an inner layer of felt padding, means to connect the protector to the guard with provision for limited relative movement, and yielding straps connected with the protector to engage the throat and nape of the neck of the wearer.

This specification signed this 5th day of May, A. D. 1926.

KEENE FITZPATRICK.  
ROBERT T. MULLINS.