Oct. 20, 1959 T. J. SOWLE 2,908,911

ADJUSTABLE FACE GUARD

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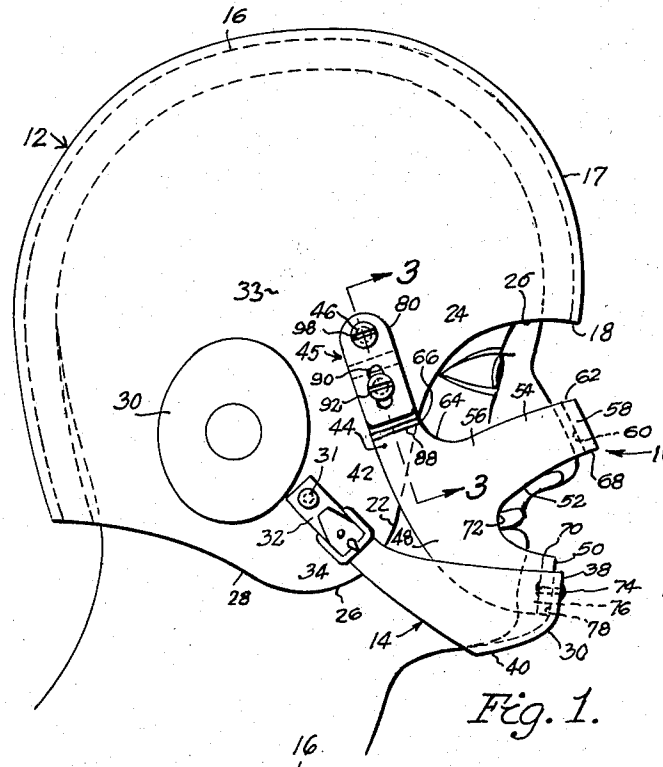

Fig. 1.

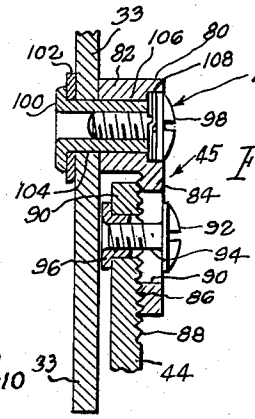

Fig. 3.

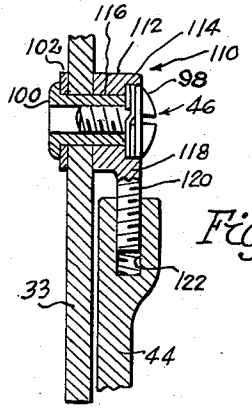

Fig. 4.

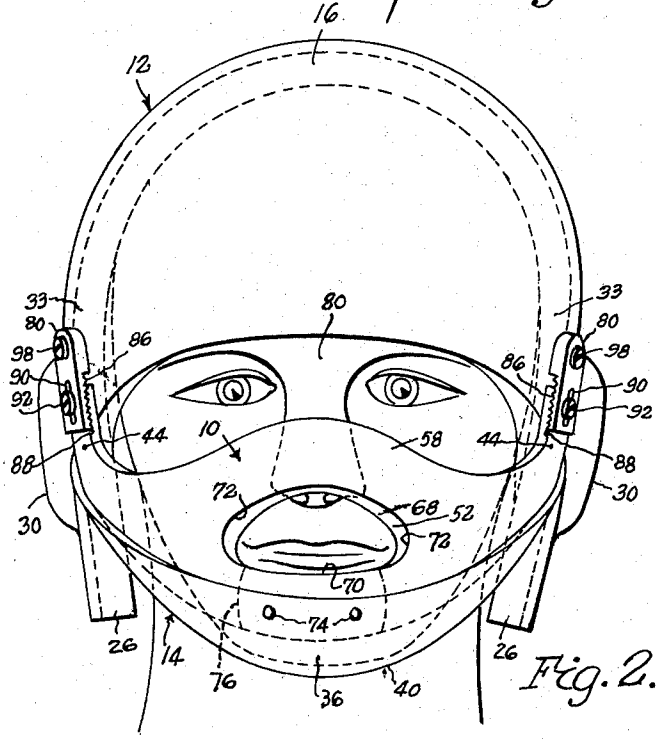

Fig. 2.

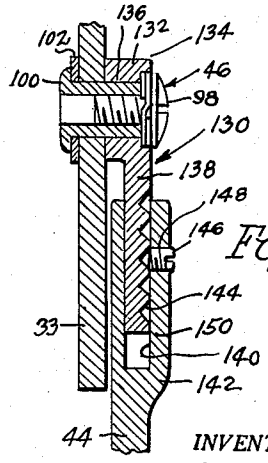

Fig. 5.

INVENTOR.
Theo J. Sowle
BY Barthel + Bugbee
Attys

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ADJUSTABLE FACE GUARD

Theo J. Sowle, Grand Rapids, Mich.

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7 Claims. (Cl. 2—9)

This invention relates to athletic face guards and, in particular, to helmet-attached adjustable face guards.

One object of this invention is to provide a helmet-attached face guard which is quickly and easily adjustable to fit the widely differing facial dimensions of different wearers, so that a single face guard is adaptable to a number of different wearers.

Another object is to provide a helmet-attached face guard of the foregoing character which eliminates the necessity for the football coach to drill holes at different locations in different football helmets to adapt the same face guard to players of different facial dimensions, as well as to provide a "fine adjustment" enabling the face guard to be more accurately fitted to the individual wearer after it has been mounted in its approximately correct position upon the helmet, thereby saving much time on the part of the coach yet providing a much better fitted face guard for the player.

Another object is to provide a helmet-attached face guard of the foregoing character which is adapted to be mounted on the helmet at the factory, and yet is adjustable by the football coach to the proper position for the individual player at the gymnasium or on the playing field.

Another object is to provide a helmet-attached face guard which makes it possible for the same helmet and face guard to be quickly and easily refitted to the head and face of another player of widely differing facial characteristics, thereby making it possible to fit properly each athlete on a squad with the helmets and face guards owned by the institution sponsoring the team without making it necessary for an individual head gear and face guard to be purchased for each new player.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawings, wherein:

Figure 1 is a side elevation of an adjustable face guard, according to one form of the invention, mounted on a football helmet and held in position against the front of the wearer's chin by a chin strap attached to the helmet;

Figure 2 is a front elevation of the adjustable face guard and helmet shown in Figure 1;

Figure 3 is a fragmentary enlarged vertical section taken along the line 3—3 in Figure 1, showing details of the adjusting device of the face guard;

Figure 4 is an enlarged vertical section upon a line similar to the line 3—3 in Figure 1, but showing a modified adjusting device; and

Figure 5 is an enlarged vertical section upon a line similar to the line 3—3 in Figure 1, but showing a still further modified adjusting device.

Hitherto, face guards have been provided for attachment to helmets for use in various sports, such as football and automobile racing, to protect the nose, teeth, lips, jaw, cheek-bones, eyes and other portions of the face from injury. One such successful face guard is shown, for example, in the Sowle application Serial No. 393,841 filed November 23, 1953 for Face Guard, which was

issued as Patent No. 2,790,175 on April 30, 1957. Such prior face guards, however, have been subject to the limitation of being comparatively inflexible as regards fitting the heads and faces of wearers of widely differing facial dimensions, although the face guard shown in the above-identified Sowle patent is superior to prior face guards in adaptability to varying facial dimensions. Under such circumstances, it has been necessary for the coach or the player himself to drill holes in the helmet in order to mount the face guard, and to drill additional holes in the helmet when it was fitted to a different player.

The present invention provides a face guard having an adjustment between it and the helmet whereby the coach or player can quickly and easily adjust the face guard to the particular facial dimensions of the player with a fine adjustment which insures an accurate fit and prevents the injuries which result from loosely or poorly fitting face guards. One form of adjusting device for this purpose is shown in Figure 3, using interfitting multiple ridges, another form in Figure 4 using a screw and nut adjustment and still another form in Figure 5 using a multiple hole and screw adjustment.

Referring to the drawings in detail, Figure 1 shows a face guard, generally designated **10**, according to one form of the invention as attached to a headgear, generally designated **12**, such as a football helmet having a chin strap **14** passing in front of and beneath the chin of the wearer. The headgear **12** is of any suitable type and may also consist of the helmet used by a race driver for the protection of his skull and forehead, and has a top portion **16** extending down over the forehead to a front or forward portion **17** having a lower front edge **18** at approximately the level of the eyebrows with a rearwardly and downwardly extending edge portion **20** and **22** respectively following the approximate location of the cheek bones to leave vision from the eyes unobstructed. The lower portion **22** of the edge, generally designated **24**, has a rounded corner **26** which it joins the lower edge **28** of the head gear or helmet **12**. Ear guards or protectors **30** are optionally provided and the chin strap **14** has an anchorage portion **32** secured as by a snap fastener **31** to the lower portion of the helmet forwardly of the ear guards **30**. The chin strap **14** is secured to the side portions **33** of the helmet **12** in any suitable manner, such as by the buckle **34** shown in Figure 1 or by a quick-detachable snap fastening or any other suitable form of fastener. The forward portion **36** of the chin strap is cupped, having an upper part **38** passing in front of the chin of the wearer and a lower part **40** passing beneath it. The face guard **10** is made of any suitable material, such as synthetic plastic, preferably transparent synthetic plastic.

The face guard **10** has an approximately U-shaped main portion **42** having, at its upper end portions **44** adjustment devices, generally designated **45**, described in detail below and pivotally secured by any suitable fastenings **46** to the side portions **33** of the headgear **12**. The main portion **42** has side portions **48** of arcuate shape extending downwardly and forwardly around the front of the wearer's chin, the front portion being designated with the reference numeral **50**. A mouth opening **52** of horizontally-elongated outline is provided between the front portion **50** and a bridge portion **54** which extends upwardly and forwardly at an inclined position, having its opposite end portions **56** joining the side portions **48** of the main portion **42** just below the nose level. The bridge portion **54** has a front portion **58** which extends over the lower front portion of the nose and which has an inner surface **60** spaced away from the nose to keep it out of contact with the nose. The upper edge **62** of the bridge portion **54** extends forwardly and upwardly

from its junction 64 with the forward edges 66 of the side portions 48. The lower edge 68 of the bridge portion 54 extends upwardly and forwardly at approximately the level of the bottom of the nose to provide protection for the nose and mouth.

The upper edge 70 of the front portion 50 lies approximately at the level of the lower lip and joins the lower edge 68 of the bridge portion 54 at the "corners" 72 of the mouth opening 52 corresponding to the "corners" of the wearer's mouth. The upper part 38 of the forward portion 36 of the chin strap 14 is optionally secured by any suitable fastener or fasteners 74 to the front portion 50 of the main portion 42, and a small pad 76 is optionally secured, as by cementing, to the inner surface 78 of the forward portion 50 and engages the front of the chin of the wearer below the level of the teeth. The pad or cushion 76 is preferably of elastic deformable material, such as natural or synthetic rubber or sponge rubber, or a resilient synthetic plastic. The side portions 48 and bridge portion 54 of the face guard 10 elsewhere than at the front portion 50 are preferably out of contact with the face of the wearer, thereby providing a space through which cooling air can pass, ventilating the guard and rendering it comfortable on the face. Moreover, this same space prevents dust from irritating the wearer by coming between the guard and the face, as in prior types of mask or face guard having large areas of padding directly engaging the face.

Each of the adjustment devices 45 includes an upper connection member 80 (Figure 3) with a thickened end or hub 82 from which a shank 84 extends downward and is provided on its rearward side with corrugations 86. The latter mesh with similar corrugations 88 on the upper end portion 44 of the U-shaped main portion 42 of the face guard 10. Each upper end portion 84 is also provided with an elongated slot 90 through which the threaded shank 94 of a fastener 92 extends. The fastener 92 is in the form of a screw with a flanged tubular nut 96 threaded onto the opposite end thereof against the rearward surface of each upper end portion 44 with its tubular threaded portion seated in a hole 97 on the upper end portion 44 of the main portion 42.

The fastening 46 of each adjustment device 45 also consists of a headed threaded fastener 98, such as a screw threaded into a flanged tubular nut 100 which passes through a washer 102 and a hole 104 in the helmet side portion 33 and also through a hole 106 in the thickened portion or hub 82 of the upper connection member 80, the outer end of the hole 106 being counterbored to receive a lock washer 108 and also the head of the screw 98.

The modified adjustment device, generally designated 110, shown in Figure 4 has a pivotal fastening 46 similar to that described above in connection with Figure 3 and similarly mounted in the hub or thickened portion 112 of the modified upper connection member 114, a hole 116 therein receiving the tubular nut 100 as before. The shank 118 of the upper connection member 114 has a threaded portion 120 which is threaded into a correspondingly-threaded socket 122 in a thickened upper end 124 of each upper end portion 44.

The further modified adjustment device, generally designated 130, shown in Figure 5 also has a pivotal fastening 46 similar to that described above in connection with Figures 3 and 4, and similarly mounted in the hub or thickened portion 132 of the modified upper connection member 134, a hole 136 therein receiving the tubular nut 100 as before. The shank 138 of the upper connection member 134 slidably and adjustably enters a correspondingly-shaped socket 140 in the thickened upper end 142 of each upper end portion 44 and has vertically-spaced indentations 144 therein, one of which is selectively engaged by the conical tip of a set screw 146 threaded into a hole 148 in the outer side wall 150 of the thickened portion 142.

In the use of the adjustable face guard of Figures 1 to 3 inclusive, the coach, or other person places the helmet 12 upon the head of the player and then places the face guard 10 in position with the pad 76 resting against the player's chin and adjusts the chin strap 14 to hold the lower part of the face guard 10 partly against the chin. With the bridge portion 58 properly spaced away from the player's nose, the coach or other person scribes or otherwise marks the proper positions of the upper end portions 44 of the face guard side portions 48 on the sides 33 of the helmet 12. The helmet 12 and face guard 10 are then removed from the player's head, the fastenings 46 are removed (Figure 3) by withdrawing the screws 98 from their tubular nuts 100, and the holes 104 drilled in the helmet side walls 33 while the face guard upper end portions 44 are held in alignment with the scribe marks. The tubular nuts 100 are then inserted through the holes 104 from the inside of the helmet, and through the holes 106 in the connection members 80 of the adjustment devices 45, whereupon the screws 98 of the fastenings 46 are rethreaded into their respective tubular nuts 100, thereby pivotally attaching the connection members 80 to the helmet sides 33.

To adjust the face guard side portions 48 upward or downward, to fit the face guard 10 to the player's face, the coach or other person loosens the screws 92 sufficiently to enable disengagement of the corrugations 86 on the connection member 80 from the corrugations 88 on the upper end portion 44 of the face guard side portions 88, then moves the side portions 48 and the remainder of the face guard 10 upward or downward relatively to the connection portion 80 as permitted by the slots 90 until the proper position is reached, whereupon the coach or other person tightens the screws 92, thereby re-engaging the corrugations 86 and 88 and rendering the adjustment permanent until readjustment is again required for another player.

The adjustment of the modified adjustment device 110 shown in Figure 4 is accomplished by removing the screws 98 from the fastenings 46 and slipping the hub 112 off the tubular flanged nuts 100. The coach or other person then turns the connection member 114 in a clockwise or counterclockwise direction, depending upon whether it is desired to shorten or lengthen the face guard side portions 48 until the desired adjustment has been achieved. The coach or other person then replaces the hubs 112 of the connection members 114 upon the tubular nuts 100, replaces the screws 98 and the adjustment is complete.

The adjustment of further modified adjustment device 130 of Figure 5 is accomplished by loosening the set screws 146 by means of a screw driver until their pointed or conical tips recede from the indentations 144. The upper end portions 44 are then moved upward or downward to achieve the desired adjustment, to the desired location, whereupon the set screws 146 are re-threaded through their holes 148 into the nearest indentation 144. This renders the adjustment permanent until such time as a readjustment is desired for fitting the helmet 12 and face guard 10 to a different player.

What I claim is:

1. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally

connect said connection members to the opposite sides of the helmet, and means for fixedly yet releasably securing said connection members to said arm members in their adjusted positions against relative longitudinal motion therebetween.

2. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally connect said connection members to the opposite sides of the helmet, and means for fixedly yet releasably securing said connection members to said arm members in their adjusted positions against relative longitudinal motion therebetween, said connection members slidably engaging said arm members in the released condition of said securing means.

3. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally connect said connection members to the opposite sides of the helmet, and means for fixedly yet releasably securing said connection members to said arm members in their adjusted positions against relative longitudinal motion therebetween, said connection members and said arm members having interengaging projections and depressions thereon preventing relative longitudinal motion therebetween in the interengaged positions thereof.

4. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally connect said connection members to the opposite sides of the helmet, and means for fixedly yet releasably securing said connection members to said arm members in their adjusted positions against relative longitudinal motion therebetween, said connection members and said arms having interengaging corrugations disposed laterally thereof preventing relative longitudinal motion therebetween in the interengaged positions thereof.

5. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately

arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally connect said connection members to the opposite sides of the helmet, and means for securing said connection members to said arm members in their adjusted positions, one of said members on each side of said mask structure having a threaded bore therein and the other member on each side having a threaded stem thereon threadedly engaging said bore.

6. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally connect said connection members to the opposite sides of the helmet, and means for securing said connection members to said arm members in their adjusted positions, one of said members on each side of said mask structure having a multiplicity of depressions spaced longitudinally therealong and the other member on each side having a projection thereon selectively engageable with one of said depressions.

7. An adjustable face guard adapted to be attached to the opposite sides of an athletic helmet, said face guard comprising a mask structure of approximately arcuate cross-section configured to at least partially cover the wearer's face and having a transversely-extending chin-protecting member disposed near the bottom thereof and arm members extending upwardly from said chin-protecting member on the opposite sides thereof and a transversely-disposed nose-protecting member spaced vertically above said chin-protecting member and extending between said arm members, connection members movably engaging said arm members and adjustable longitudinally relatively thereto, pivot elements secured to said connection members and adapted to pivotally connect said connection members to the opposite sides of the helmet, and means for securing said connection members to said arm members in their adjusted positions, one of said members on each side of said mask structure having a multiplicity of depressions spaced longitudinally therealong and the other member on each side having a threaded element threaded therethrough with a projection thereon selectively engageable with one of said depressions.

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