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PIVOTING FACE GUARD ASSEMBLY

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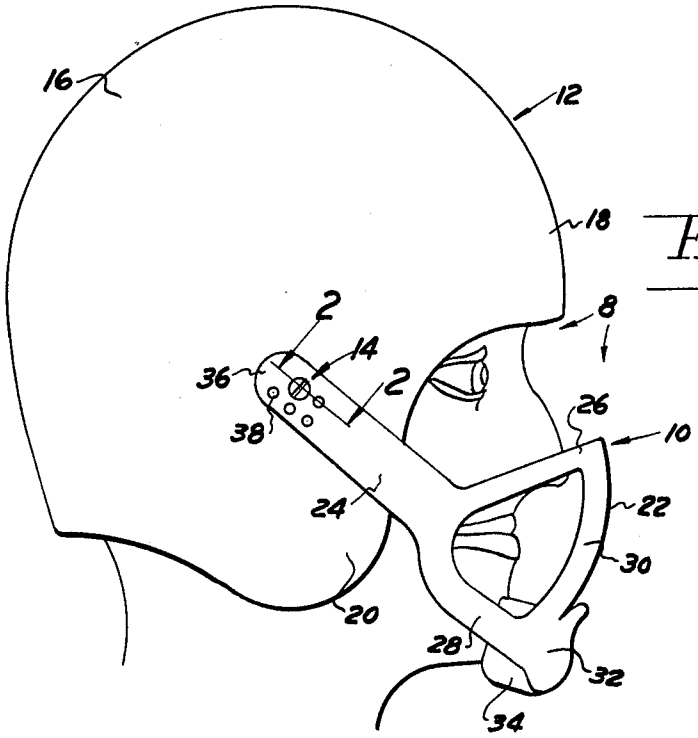


Fig. 1

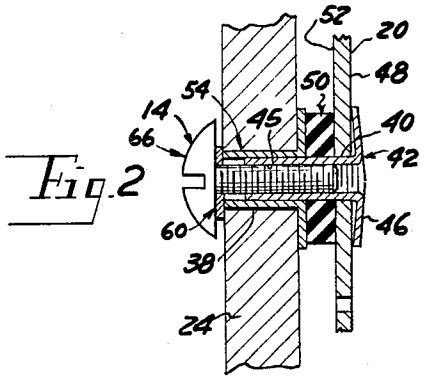


Fig. 2

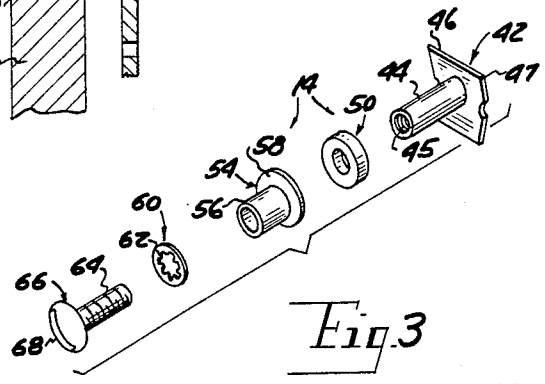


Fig. 3

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PIVOTING FACE GUARD ASSEMBLY

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This invention relates to protective athletic head gear and, in particular, to face guards attached to athletic helmets.

Hitherto, athletic helmets have been equipped with approximately U-shaped face guards having forward or central portions constructed and arranged to protect the nose, mouth, teeth and jaw of the athlete and also having side arms which not only partially protect the athlete's cheek bones but also serve as attachment portions by which the face guard is connected to the helmet. While lacing has been frequently used for attaching the side arms to the side walls of the helmet, such means of attachment requires the drilling of multiple holes in the helmet and also the threading of the lacing through the holes in the side arms and helmet, requiring the expenditure of considerably more time and skill than if threaded fasteners were employed.

Heretofore, however, the use of ordinary threaded fasteners for attaching the side arms to the helmet have been unsatisfactory because of their tendency to either tighten up and prevent free pivoting of the face guard upon the helmet or to loosen and fall out under conditions of intensive use. The loss of such a fastener causes the side arm previously attached by the fastener to become detached from the helmet and thereby render the entire headgear not only temporarily useless but actually a detriment because of the dangling of the face guard from the side arm remaining connected to the helmet. The present invention eliminates these disadvantages by providing a threaded fastening element which neither loosens or tightens up but maintains free pivoting.

Accordingly, one object of the present invention is to provide a face guard with a connection which when once secured in position, retains its adjustment without either substantially tightening or loosening and maintains free pivoting of the face guard upon the helmet regardless of how intensive the conditions of use become.

Another object is to provide a face guard with a connection of the foregoing character which is quickly and easily installed with a minimum of labor and without the necessity for more than the ordinary amount of skill.

Another object is to provide a face guard with a connection of the foregoing character wherein the connection not only prevents the components thereof from coming apart during installation or adjustment, but also accommodates itself to any irregularities arising between the helmet and face guard as well as providing shock-absorbing characteristics.

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

FIGURE 1 is a side elevation of an athletic helmet provided with a face guard and connection according to one form of the invention;

FIGURE 2 is an approximately horizontal, slightly inclined section, upon an enlarged scale, taken along the line 2—2 in FIGURE 1; and

FIGURE 3 is an exploded perspective view of the aligned separated components of the pivoting connecting device shown in FIGURES 1 and 2.

Referring to the drawing in detail, FIGURE 1 shows a face guard, generally designated **10**, attached to an athletic helmet, generally designated **12**, by a pivoting connecting device, generally designated **14**, according to one form of the invention with or without the usual chin strap (not shown). The helmet **12** has top, front and side portions

16, **18** and **20** respectively, the side portions or side walls **20** extending downward on opposite sides of the player's head past his cheek bones and jaw bones. The details of the helmet **12** are conventional and beyond the scope of the present invention.

The face guard **10** has an approximately U-shaped main portion **22** with upwardly and rearwardly-extending side arms **24** and with upper, lower and forward protective members **26**, **28** and **30** respectively. The approximately vertical members **30**, of which only one is shown, are spaced apart from one another for the insertion or withdrawal of a mouthpiece (not shown) and are connected to one another at their lower ends by a cupped jaw-protecting portion **32** to the inner side of which is cemented or otherwise secured a cushion pad **34** of elastic deformable material, such as foam rubber or a resilient synthetic rubber or synthetic plastic. The upper portion **26** serves as a bridge portion interconnecting the side arms **24** on their upper sides and also interconnects the upper ends of the vertical members **30**. The rearward end portions **36** of the side arms **24** are preferably provided with multiple holes **38** in order to give a range of adjustments of the face guard **10** to a given helmet **12**, so that the same face guard **10** and helmet **12** may be adjusted to fit different players having a variety of different facial dimensions and characteristics.

The side portions or side walls **20** of the helmet **12** are drilled with a pair of aligned holes **40** as described below in connection with the installation of the invention, for the reception of a pair of outwardly-facing tubular nuts, generally designated **42**, which constitute the innermost components of the pivoting connecting devices **14**. The internally-threaded tubular shanks **44** of the nuts **42** have threaded bores **45** and extend outwardly through the holes **40** in the helmet side wall **20** with the corners **47** of their lightly convexo-concave square heads **46** engaging the inner surface **48** of the side wall **20** (FIGURE 2). A resilient washer **50** of elastic deformable material, such as rubber or synthetic rubber, is mounted upon the tubular shank **44** against the outer surface **52** of the side wall **20**. A flanged spacing sleeve **54** is mounted upon the tubular shank **44** with its tubular shank **56** telescopingly engaging the tubular shank **44** and with its annular flange **58** abutting the resilient washer **50**. A lock washer **60** is mounted at the outer end of the tubular shank of the flanged sleeve **54** with its internal teeth **62** engaging the threaded shank **64** of a screw **66**, the head **68** of which engages and urges the lock washer **62** against the outer end of the tubular shank **56** of the flanged spacing sleeve **54**. The tubular shank **56** of the flanged spacing sleeve **54** passes through one of the holes **38** in the particular side arm **24** and the threaded shank **64** of the screw **66** is threaded through the lock washer **60** into the internally-threaded shank **44** of the tubular nut **42**.

In the installation of the face guard **10** upon the helmet **12** by the fastening devices **14**, a suitably sized hole is drilled at **40** in each helmet side wall **20** with the holes in alignment with one another, in the most convenient position for the average player, reliance being made upon the multiple holes **38** to provide sufficient adjustment to fit the head of the individual player. The tubular nuts **42** are then inserted from inside the helmet with their shanks **44** projecting outwardly therefrom, and are then held temporarily in place by pushing the rubber washers **50** over the shanks **44** against the helmet side walls **20**. The spacer sleeves **54** are then slipped over the tubular shanks **44** of the tubular nuts **42** against the resilient washers **50**. The helmet **12** is then placed upon the wearer's head with its forward portion **18** as close as possible to the brow line without interfering with vision.

The face guard **10** is then applied to the wearer's face with the chin pad **34** seated firmly on the wearer's chin

and with the side arms **24** extending upwardly and rearwardly toward the thus-assembled connecting device components **42**, **50** and **54**. The nearest holes **38** in the side arms **24** to the shanks **56** of the spacing sleeves **54** are then slid over the shanks **56**. The lock washers **60** are then placed on the shanks **64** of the screws **66** and the threaded shanks **64** inserted through the tubular shanks **56** of the spacing sleeves **54** into the threaded bores **45** of the tubular nuts **42**. By means of an ordinary screw driver, the screws **66** are then firmly tightened firmly against the lock washers **60** and spacer sleeve **54**, pulling the corners **47** of the heads **46** of the tubular nuts **42** firmly against the helmet side walls **20** and thereby locking the face guard **10** to the helmet **12** while permitting free pivoting of the former relatively to the latter.

The head gear **8**, consisting of the assembly of the face guard **10** and helmet **12** is used in play or action in the ordinary manner and therefore requires no special description. At any time he so desires, the player can raise the face guard **10** by swinging its front portion **22** upward around the pivot connecting devices **14**, which insure such free pivotal action while preventing either tightening or loosening. If the helmet is subsequently used by another player with different facial characteristics, the side arms **24** of the face guard **10** may be detached from the connecting devices **14** and reattached by using a more conveniently located hole **38** adapted to the particular facial characteristics of the player, by reversing the foregoing procedure.

What I claim is:

1. A pivoting face guard assembly for mounting in aligned holes in the opposite side walls of a protective helmet, said assembly comprising

an approximately U-shaped face guard having a central face-protecting portion disposed forwardly thereof and having opposite laterally-spaced side arms extending rearwardly from the opposite ends of said central portion,

said side arms near their rearward ends having a pair of aligned holes therethrough adapted to be aligned with the aligned holes in the helmet side walls;

and a pair of pivotal face guard connectors,

one face guard connector being mounted in each of said pair of aligned side arm holes:

each pivotal connector including

a headed threaded inner fastener having a tubular internally-threaded shank adapted to be inserted through and extend outwardly from one of the aligned helmet side wall holes and having means thereon adapted to engage the helmet side wall in rotation-preventing relationship therewith,

a tubular spacer disposed in one of said face guard side arm holes in telescoped relationship with said inner fastener and having an axial length substantially equal to the thickness of its respective face guard arm,

and a headed threaded outer fastener having an externally-threaded shank extending through said spacer into threaded engagement with said inner fastener and with its head having an abutting connection with said spacer.

2. A pivoting face guard assembly, according to claim **1**, wherein the abutting connection of the head of said outer fastener with said spacer including an outer washer is disposed between the outer end of said spacer and the head of said outer fastener.

3. A pivoting face guard assembly, according to claim **1**, wherein said spacer has a flange on its inner end and wherein a resilient inner washer is mounted on said inner fastener between said flange and the head of said inner fastener and is adapted to egage the adjacent side wall of the helmet.

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