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HELMET HAVING RAPID HEADSIZE ADJUSTABILITY

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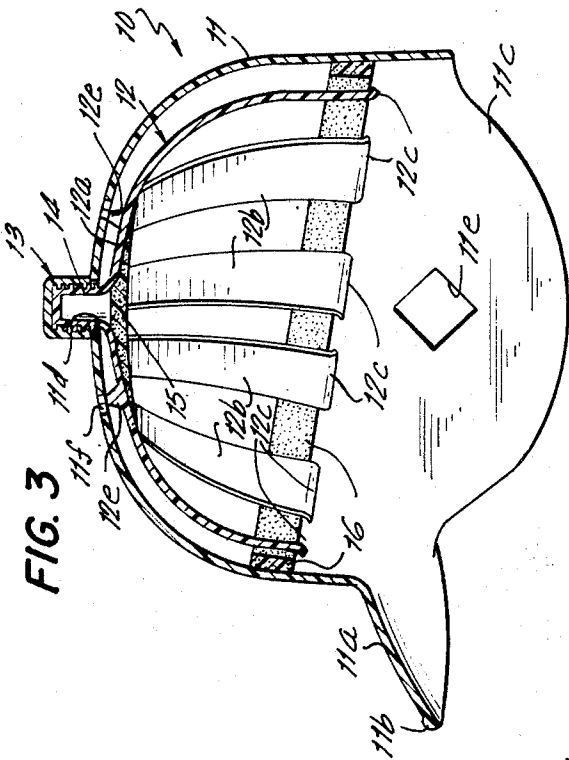


FIG. 3

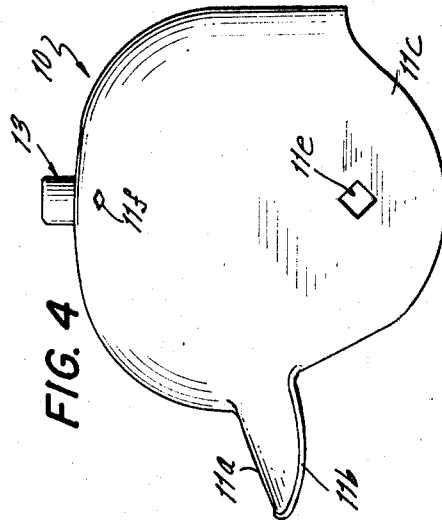


FIG. 4

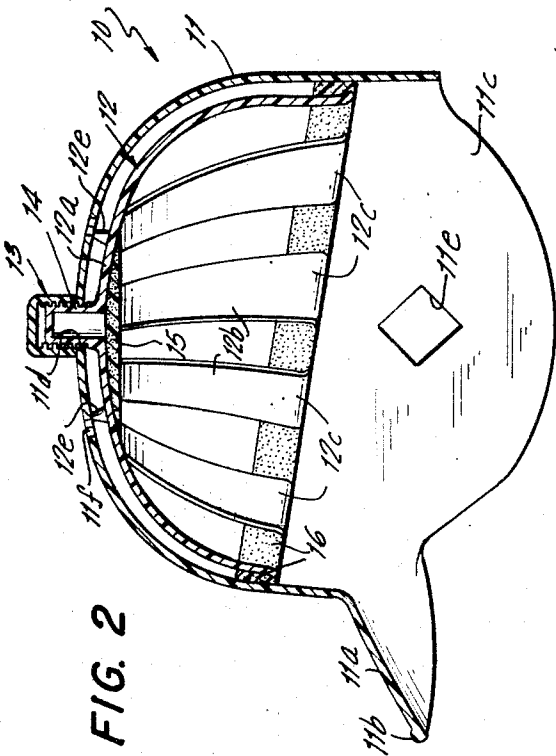


FIG. 2

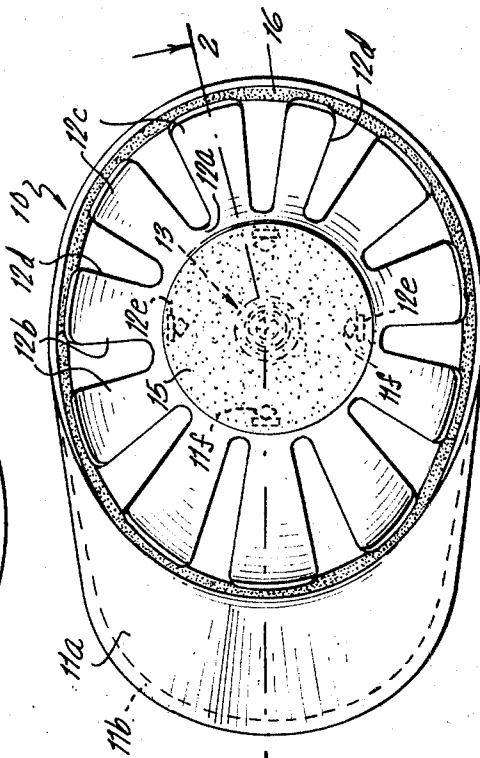


FIG. 1

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**HELMET HAVING RAPID HEADSIZE
 ADJUSTABILITY**

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 5 Claims. (Cl. 2—3)

ABSTRACT OF THE DISCLOSURE

A protective headgear comprising a plastic molded outer protective shell and an inner relatively resilient head fitting and gripping member having a plurality of spaced free ended head gripping fingers extending radially and curved downwardly from a central portion. The latter coats with the shell for expansion and contraction of the fingers for varying the headsize upon manual adjustment of a rotatable means located on the top of the shell.

BACKGROUND OF THE INVENTION

Field of the invention

The invention relates to protective headgear and more particularly is directed to a molded plastic helmet having rapid headsize adjustability.

Description of the prior art

A need has been found to exist for a protective batter's helmet, particularly for use in little league baseball, wherein a single helmet will serve all the players on the team by being quickly and easily adjustable to any and all the various headsizes of the players.

SUMMARY OF THE INVENTION

Among the objects of the invention is to provide a protective helmet having rapid headsize adjustability to meet the need as hereinbefore stated. The helmet shall comprise few and simple parts which are easy to assemble with a minimum of labor, which parts shall be relatively inexpensive to manufacture in quantity production of resinous plastic material by injection molding methods. The molded parts shall include a protective outer shell and a head gripping member mounted therein by a threaded stud extending through an opening in the top of the shell. The stud shall be engaged by a manually rotatable nut, which when tightened will flex a central portion of the head gripping member to constrict head gripping fingers extending therefrom. The helmet shall be rugged in construction to withstand rough usage, shall be easy to keep clean and sanitary, shall be foolproof in operation and practical and efficient to a high degree in use.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a bottom view of a protective helmet constructed to embody the invention showing interior construction.

FIG. 2 is a vertical section taken on line 2—2 in FIG. 1 with the head gripping member adjusted to maximum headsize.

FIG. 3 is a vertical section similar to FIG. 2 but showing the head gripping member adjusted to a smaller headsize.

FIG. 4 is a side elevational view of the helmet shown in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring in detail to the drawing, 10 denotes a protective helmet as an embodiment of the invention for use by baseball batters comprising an outer protective shell 11, an inner head gripping member 12, and a finial 13.

Shell 11 may be molded as an integral unit of a suitable tough plastic material, such as, linear polyethylene or acrylonitrile butadiene styrene and formed with a sun visor or peak 11a having a peripheral bead 11b, lateral ear protectors 11c and a centralized top opening 11d. An ear opening 11e may be provided in each ear protector 11c and a plurality of vents 11f provided radially about top opening 11d. Vents 11f are here shown as four in number and of a diamond shape for design effect, ear openings 11d also being of matching diamond shape.

Inner head gripping member 12, which may be molded of a resilient resinous material such as linear polyethylene or polypropylene, has a contour to fit the wearer's head and includes a central portion 12a from which head gripping fingers 12b extend separated by cutouts 12d and terminating in free ends 12c. When head gripping member 12 is in a maximum size position shown in FIG. 2, the finger free ends 12c contact a cushioning band 16 suitably attached, as by adhesive means, to the interior surface of outer shell 11. Cushioning band 16 and pad or cushion 15, which may be adhesively attached to the interior surface of gripping member central portion 12a, may both be made of a compressible and resilient material such as rubber or polyurethane foam.

A threaded means is utilized for attaching inner head gripping member 12 to outer shell 11, which means may be a separate bolt (not shown) extending through an opening (not shown) which may be provided in central portion 12a to register with top opening 11d. Preferably and as shown in the drawing, the attaching means is a threaded stud 14 integrally molded to project upwardly from central portion 12a and extend through top opening 11d in shell 11. Finial 13, which may also be molded of a resinous plastic, is formed with internal threads for engaging threaded stud 14 and securing inner head gripping member 12 in position.

The headsize adjustability feature of the invention is accomplished by the relative positioning of finial 13 with respect to stud 14 coacting with suitable fulcrum points established between shell 11 and head gripping member 12. Such fulcrum points are provided by means of a plurality of bosses 12e, herein shown as four in number, one pair being located along the front to rear axis and a second pair being located along the side to side axis, each boss 12e being spaced radially from stud 14. Bosses 12e are illustrated as integrally formed on the surface of gripping member central portion 12a for engaging shell 11, it being understood that comparable bosses may instead be integrally formed on the interior surface of shell 11 for engaging central portion 12a.

The utility and operation of helmet 10 will now be apparent. Shell 11, head gripping member 12, and finial 13, having been fashioned as hereinbefore described and shown in the drawing, are readily assembled by merely inserting stud 14 through top opening 11d and threading finial 13 thereon. Finial 13 may be constructed, as seen in FIG. 2, to engage shell 11 when bosses 12e abut the interior of the latter and finger free ends 12c contact cushioning band 16. In this position, head gripping member 12 is securely mounted in shell 11 and helmet 10 is adjusted to a maximum headsize. Cushion 15 and cushioning band 16 cooperate with head gripping member 12 to insulate the wearer's head from any external shock received by shell 11.

To reduce the headsize of helmet 10, finial 13 is merely tightened, that is, rotated in the usual clockwise direction drawing stud 14 upwardly and bringing the centre of head gripping member closer to shell 11. As is clear from FIG. 3, this tightening of finial 13 flexes the central portion 12a with bosses 12e acting as fulcrums thereby bowing the finger free ends 12c radially inwardly away from cushioning band 16 to effect a smaller headsize. Thus, rotation

of finial 13 as required in either a clockwise direction for smaller headsize or a counterclockwise direction for larger headsize permits easy and rapid changes of headsize making a single helmet 10 practical for use when batting by all the players of a baseball team as well as insuring a more perfect and comfortable fit for the individual. The invention may be employed in helmets for other uses where ease in headsize adjustability is desired.

The improved helmet construction herein disclosed is seen to achieve the several objects of the invention and to be well adapted to meet conditions of practical use. As various possible embodiments might be made in this invention, and as various changes might be made in the disclosed construction, it is to be understood that all matters herein set forth or shown in the accompanying drawings are to be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A protective helmet comprising an outer shell having a top opening, an inner head gripping member shaped to substantially conform to the head of a wearer, said member having a central portion and a plurality of peripheral fingers extending from said central portion, a plurality of bosses disposed between said outer shell and gripping member central portion arranged circumferentially around said top opening effecting a spacing therebetween, each of said bosses providing a fulcrum point, and means extending from said central portion through said top opening for attaching the gripping member to the shell and having manipulative means for deforming said central portion to-

ward the shell whereby said fingers are inwardly flexed on said fulcrum points for headsize adjustment.

2. The protective helmet defined in claim 1 including a cushioning band carried on the interior of said shell against which free ends of said fingers rest when the gripping member is in a maximum headsize position.

3. The protective helmet defined in claim 1 in which said head gripping member is molded of a resilient resinous plastic and said bosses are integrally formed in said central portion.

4. The protective helmet defined in claim 1 in which said means is a threaded stud engaged by a threaded finial, the latter serving as said manipulative means and being rotatable against the exterior of said shell to vary said deformation of said central portion for headsize adjustment.

5. The protective helmet defined in claim 3 in which said means includes a threaded stud integrally formed in said central portion.

References Cited

UNITED STATES PATENTS

1,251,959	1/1918	Brodie	2-6
2,239,946	4/1941	Upchurch	2-3
3,181,532	5/1965	Harris	2-3 X
3,221,340	12/1965	Joffe	2-3

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