

[54] **DUAL VISOR HEADGEAR**
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[73] Assignee: **The United States of America as represented by the Secretary of the Navy**
[22] Filed: **Mar. 29, 1971**
[21] Appl. No.: **128,667**
[52] U.S. Cl. **2/6, 2/10**
[51] Int. Cl. **A42b 3/00**
[58] Field of Search..... **2/3, 5, 6, 8, 9, 10**

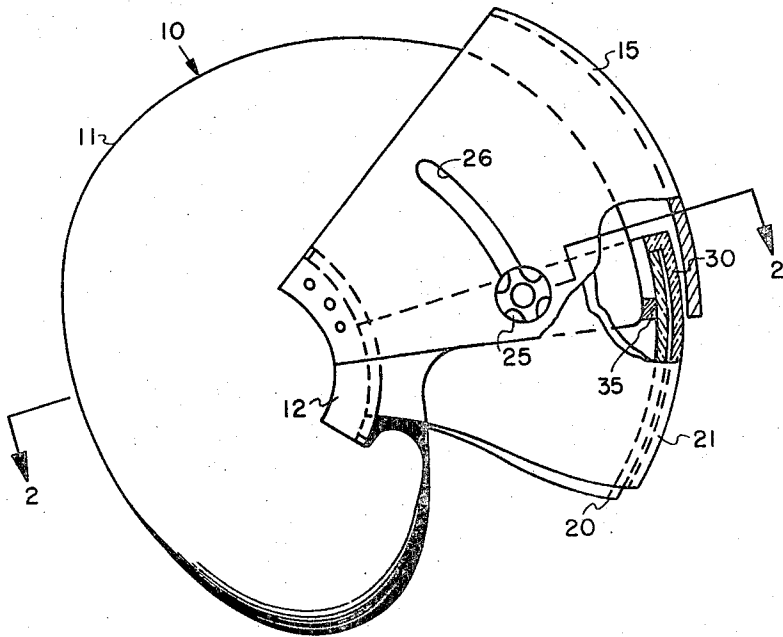
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[57] **ABSTRACT**
A safety headgear open at the face including an outer tinted visor and an inner clear visor retained between arced tracks on either side of the face opening. In the stowed position both visors are retracted behind a visor canopy across the forehead section of the headgear. Both visors are extensible across the eye area of the face opening by a combination of a locking knob attached to the outer visor extending through an opening in the canopy and lugs formed on the upper edge of the outer visor to engage the upper edge of the inner visor. The position of the outer visor is determined by the position of the knob in the opening and the inner visor is retained simply in position by friction pads.

9 Claims, 2 Drawing Figures



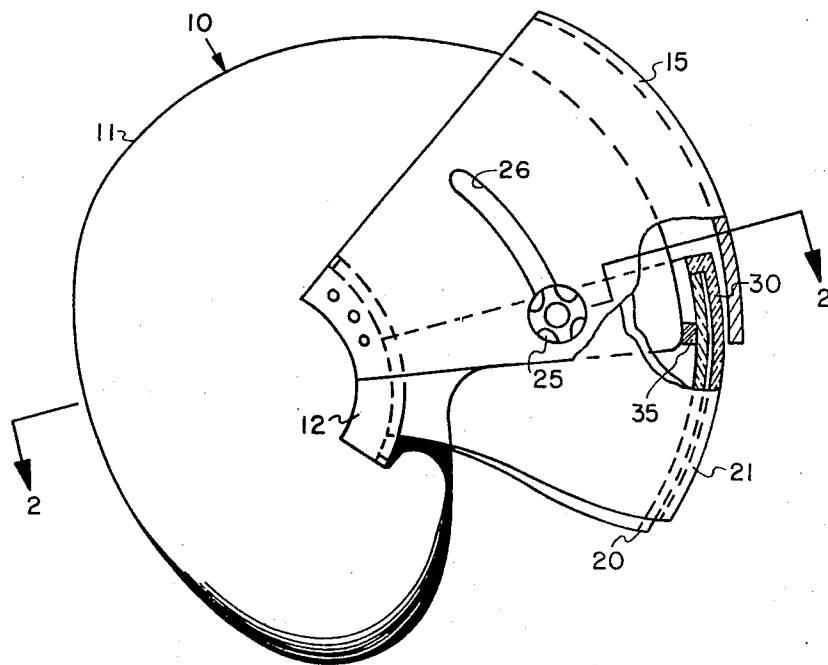


Fig. 1

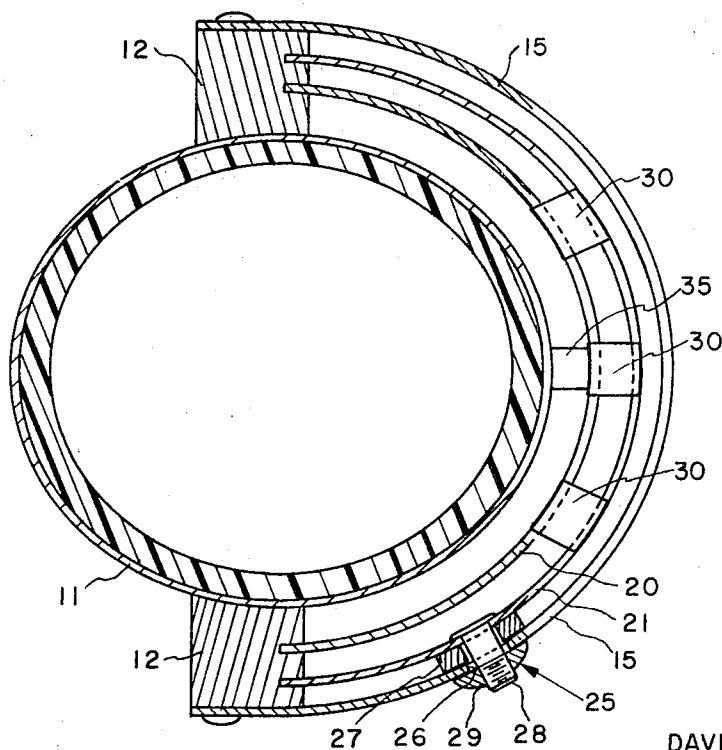


Fig. 2

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DUAL VISOR HEADGEAR

STATEMENT OF GOVERNMENT INTEREST

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

BACKGROUND OF THE INVENTION

The present invention relates to safety headgear, and more particularly to headgear equipped with retractible visors.

In military aircraft it is the common practice to provide each crew member with a crash helmet which also serves as a convenient attachment for various devices such as both clear and tinted retractible visors. Heretofore, the visors were separately and independently manipulated from above the face by the wearer according to his needs. In case of an emergency ejection, the wearer usually would want to move both visors in front of the face irrespective of visibility attenuation in order to obtain maximum protection against impacting objects. Since at least two sequential manipulations were required, time often prevented this.

SUMMARY OF THE INVENTION

Accordingly, it is the general purpose and object of the present invention to provide in a dual visor helmet capable of quickly and positively positioning both visors in front of the face prior to an ejection emergency by a single manipulation of the wearer. Another object of the invention is to provide a helmet having selective retractibility of the visors.

These and other objects are accomplished according to the present invention by providing lugs attached to the upper edge of the outer visor which engage the upper edge of the inner visor for lowering the inner visor concomitantly with downward movement of the outer visor. The inner visor is maintained in position by friction, such as friction pads attached to the helmet exterior and compressing against the inner visor. The outer visor is positioned by a locking knob extending through a track formed in a visor canopy such that the outer visor can be positively located in any position by tightening the locking knob. The combination of the lowering and locking the knob positively positions and retains both visors in a lower-most position before pilot ejection. Also with the outer visor in the retracted upper position the inner visor is manually retractible.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 represents a side view, partially in cutaway, of a protective headgear having two visors constructed according to the present invention; and

FIG. 2 represents another view of the inventive headgear taken in cross section along line 2—2 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1 a protective headgear assembly 10 is shown comprising a helmet 11 having two track assemblies 12 symmetrically attached on either side of the face opening. A visor canopy 15 is attached at the distal ends to the outside of track assemblies 12 extend-

ing in the form of an arc over the forehead section of helmet 11 to form an enclosure between the respective track assemblies 12 on the outside of helmet 11. Each track assembly 12 forms dual parallel tracks extending over an arc on its forward side wherein each track slidably retains corresponding distal ends of an inside clear visor 20 and an outside tinted visor 21. Visors 20 and 21 are arced between the corresponding tracks of track assemblies 12 to clear the outer dimensions of helmet 11 permitting free movement thereof within the enclosure formed by canopy 15 and helmet 11. Accordingly, visors 20 and 21 can be selectively positioned within the limits of track assembly 12 either within canopy 15 or across the face opening generally in the area in front of the eyes of the wearer or in any intermediate position. In order to positively restrain outer visor 21 in any desired position as well as to manually extract the outside visor from within canopy 15, a visor lock 25 extends through an arcuate slot 26 in canopy 15 and attaches to the outside visor 21 proximate the upper edge. It is displaced to one side in order to conserve overall height of headgear assembly 10. Slot 26 is arcuate about the pivotal axis of visors 20 and 21. Outside visor 21 includes a plurality of lugs 30 formed at the upper edge extending inwardly to engage the upper edge of inside visor 20. Thus, downward articulation of visor lock 25 extends both the outer and the inner visors 20 and 21 from beneath canopy 15. The inner visor 20 is retained in the extended position by a friction pad 35, which can be of a deformable material having high friction properties such as foam rubber. It is attached at the upper edge of the face opening of helmet 11 and compresses against the inner visor 20.

As shown in FIG. 2, visor lock 25 includes a threaded shaft 28 fixed to outer visor 21 and extending through a washer 27 and slot 26 terminating in a threaded knob 29 on the outside of canopy 15. Tightening knob 29 secures visor 21 to canopy 15 in any selected position. Also the dimensions of lugs 30 are selected to engage the upper edge of visor 20 including any radial tolerances of the respective arcs of each visor.

In operation the wearer can select either the combination of the clear and tinted visors, the clear visor alone, or no visors through the articulation of lock 25 along slot 26. The first option results from a downward movement of lock 25 by which tinted visor 21 is lowered engaging and carrying along clear visor 20. The second option results from raising lock 25 and thus tinted visor 21 leaving the clear visor 20 in position. The third option results simply from a manual raising of the clear visor 20. In order to accommodate emergency situations, such as ejection of the wearer from a high speed aircraft, both visors can be extended downward by lock 25 in a single manipulation and firmly affixed in that position by the tightening the knob thereon. Thus, the wearer is given the maximum protection of a dual shielding of the sensitive eye areas with the simplicity of rapid and single manipulation.

Some of the many advantages of the present invention should now be readily apparent. The invention provides the desired selection of a clear visor and a tinted visor by a single manual control reducing both the number of components in the assembly and the undesirable effect of the weight thereof on a wearer's

head. At the same time the invention provides the maximum protection to the wearer's eyes during an ejection emergency within the limited number of components disclosed.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A protective headgear comprising, in combination:

a helmet;

two arcuate track assemblies each respectively attached adjacent the sides of the face opening on the outside of said helmet, the convex sides thereof oriented forwardly towards the face opening;

an inner clear visor and an outer tinted visor the respective distal ends thereof slidably engaging corresponding track of said track assemblies, each visor forming a generally spherical section the radial dimensions thereof being respectively defined by the dimensions of the helmet for the inner visor and by the inner visor clearance dimensions for the outer visor;

engagement means formed on the outer visor for engaging the inner visor on the downward movement of the outer visor;

a visor canopy arced over the forehead section of said helmet attached at the distal ends thereof to the outer surfaces of said track assemblies forming an enclosure above the face opening of said helmet to contain the respective visors;

friction means interposed between said helmet and said inner visor for providing a restraint on the motion of said inner visor; and

locking means attached at one end to said outer visor the other end thereof engaging said canopy for providing a manually fixed connection between said canopy and said outer visor.

2. A protective headgear according to claim 1, further comprising:

said engagement means including lugs formed on the upper edge of said outer visor extending inwardly to engage the upper edge of said inner visor.

3. A protective headgear according to claim 2 further comprising:

said locking means including an arcuate opening in said canopy, a threaded shaft attached at one end thereof to said outer visor extending through said

opening a manual locking knob threadably engaging the other end of said shaft on the outside of said canopy and a washer interspaced between said outer visor and said canopy on said shaft.

4. A protective headgear according to claim 3, further comprising:

said friction means including a foam rubber pad attached at the one side thereof to the outside of said helmet proximate the upper edge of the face opening thereof, the other side of said pad being compressed by said inner visor.

5. Eye protection apparatus comprising:

support means;

inner and outer visors each mounted on said support means and each movable between a first position in front of the eyes and a second position above the eyes; and

engagement means operatively connected between said inner and outer visors for limiting the independent movement of said inner visor toward the second position until it coincides with said outer visor, and for limiting the independent movement of said outer visor toward the first position until it coincides with said inner visor.

6. Eye protection apparatus according to claim 5, further comprising:

friction means operatively connected between said support means and said inner visor for restraining the free motion thereof.

7. Eye protection apparatus according to claim 6, further comprising:

locking means operatively connected between said support means and said outer visor for selectively affixing the outer visor in a fixed orientation therewith.

8. Eye protection apparatus according to claim 7, further comprising:

said inner and outer visor forming generally spherical sections pivotally mounted by the distal ends thereof on said support means, the dimensions of the inner visor being defined by the pivotal arc thereof over the forehead of the wearer and the dimensions of the outer visor being defined by the pivotal arc thereof over the inner visor.

9. Eye protection apparatus according to claim 8, further comprising:

said engagement means including lugs formed on the upper edge of said outer visor extending inwardly to engage the upper edge of said inner visor.

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