

Nov. 18, 1958

J. A. AILEO

2,860,343

HEADGEAR WITH RETRACTABLE EYE SHIELD

Filed Oct. 27, 1955

2 Sheets-Sheet 1

Fig. 1.

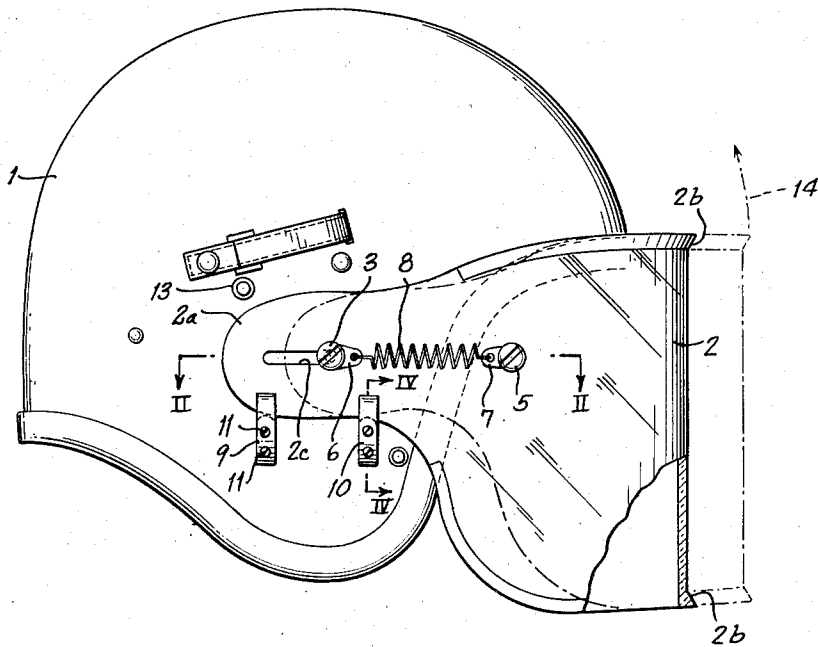
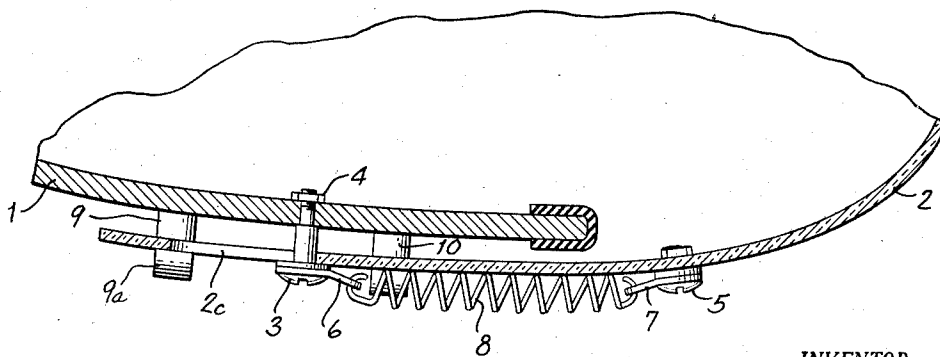


Fig. 2.



INVENTOR.
JACKSON A. AILEO
BY
Robert S. Dureham
ATTORNEY

Nov. 18, 1958

J. A. AILEO

2,860,343

HEADGEAR WITH RETRACTABLE EYE SHIELD

Filed Oct. 27, 1955

2 Sheets-Sheet 2

Fig. 3.

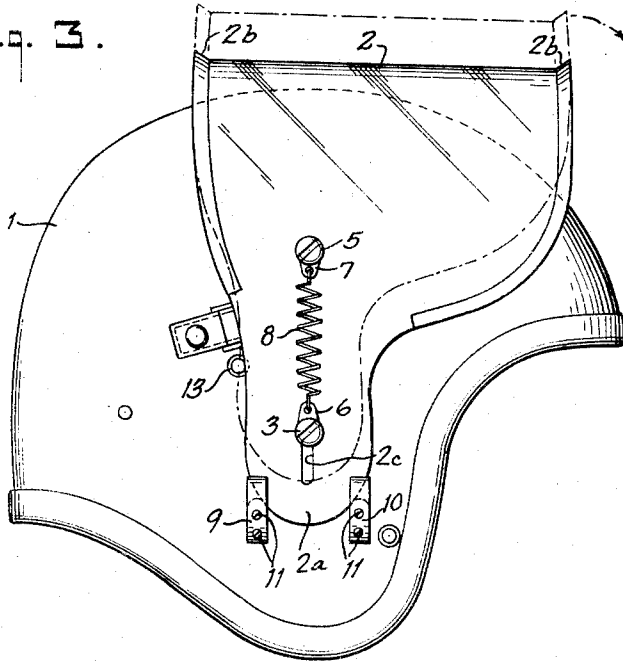


Fig. 4.

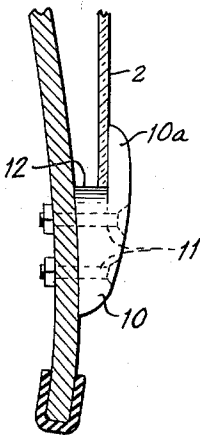
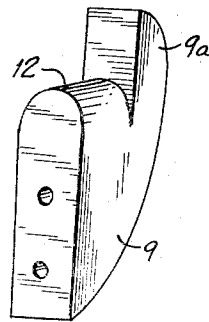


Fig. 5.



INVENTOR.

JACKSON A. AILEO

BY

Robert P. Dunham

ATTORNEY

1

2,860,343

HEADGEAR WITH RETRACTABLE EYE SHIELD

Jackson A. Aileo, Carbondale, Pa., assignor to Leonard P. Frieder, Great Neck, N. Y.

Application October 27, 1955, Serial No. 543,078

5 Claims. (Cl. 2—9)

This invention relates to a headgear having a retractable eye shield. It is illustrated herein as applied to a helmet of the type worn by aviators and others engaged in hazardous occupations, and it has particular advantages when used in connection with such helmets. However, in its broadest aspects, the invention has substantial utility in connection with other types of headgear.

It has been proposed to provide a safety helmet or other headgear of generally similar nature, with an eye shield movable between a shielding position in front of the wearer's eyes and a retracted position above the crown of the headgear.

An object of the present invention is to provide a headgear of the type described, including a simplified eye shield structure.

Another object is to provide a combined headgear and eye shield structure including improved latch means for holding the eye shield in either of its shielding and retracted positions, and improved means for releasing the shield from the latch means so that it may be quickly and easily moved from one position to the other.

The foregoing objects of the invention are attained in the embodiment of the invention described in detail herein. This embodiment includes an eye shield in the form of a sheet of plastic material bent to form a generally semi-cylindrical central portion and having a pair of integrally formed wings which extend rearwardly along the sides of the headgear. The shield is pivotally mounted on pivot pins which extend through slots in the shield, so that the shield is slidable on the pins as well as being rotatable about the pins. Springs are provided between the pins and the shield, biasing the shield to a latching position in which the pins are at one end of the slots, and the wings engage stop members fastened on the side of the helmet, which stop members are effective to prevent rotation of the shield on the pins. By sliding the shield along the pins, the wings can be moved away from one of the stop members, and may thereafter be rotated about the pins to swing the shield from one of its positions to the other.

Other objects and advantages of the invention will become apparent from a consideration of the following description and claims, taken together with the accompanying drawings.

In the drawings:

Fig. 1 is a side elevational view of a headgear and retractable eye shield embodying the invention, with the shield in its shielding position;

Fig. 2 is a sectional view, on an enlarged scale, taken on the line II—II of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a view similar to Fig. 1, showing the shield in its retracted position;

Fig. 4 is a fragmentary sectional view along the line IV—IV of Fig. 1, but on an enlarged scale, showing a detail of one of the stop members; and

2

Fig. 5 is a perspective view of one of the stop members, detached from the headgear.

In the drawings, there is shown at 1 a safety helmet having a rigid outer shell. This helmet may be of the type described in detail and claimed in the copending application of Leonard P. Frieder and Walter S. Finken, Serial No. 201,904, filed December 21, 1950, entitled, Headgear Structure, now U. S. Patent No. 2,739,309, issued March 27, 1956.

Mounted on the helmet shell 1 is an eye shield generally indicated by the reference numeral 2 and preferably formed from a single sheet of plastic material. The central portion of the shield is generally cylindrical in contour, and terminates at the sides in a pair of integral rearwardly projecting wings 2a. The upper and lower edges of the shield 2, at the central portion thereof, are provided with forwardly projecting tapered flanges 2b, whose function is to deflect forwardly air moving off the edges of the shield and thereby to prevent the carrying of particles into the space behind the shield.

Each of the wings 2a is provided with a central elongated slot 2c which extends horizontally when the shield is in the shielding position as shown in Fig. 1.

Mounted on each side of the shell 1 is a pivot pin 3 shown as a bolt held in place on the shell 1 by means of a nut 4. Fixed on the shield 2 is another bolt 5, the bolt 5 being spaced horizontally forward of the pivot pin 3 when the shield is in its shielding position. The bolts 3 and 5 hold spring retainer plates 6 and 7 in place on the shell, the plates 6 and 7 being apertured to receive the ends of a coil spring 8.

A pair of stop members 9 and 10 are attached to the sides of the shell 1 by means of screws 11. The details of the stop members 9 and 10 are best seen in Figs. 4 and 5. As there shown, each of the stop members comprises a body portion through which the screws 11 extend and an upwardly projecting flange 9a or 10a at the upper end of its outer side. The upper ends of the body portions inside the flanges 9a, 10a are rounded, as shown at 12 in Figs. 4 and 5.

Mounted on the shell 1 by any suitable means is another stop member 13, of any suitable construction. Stop member 13 is located somewhat above the upper edge of the wing 2a when the parts are in the positions shown in Fig. 1. The helmet shell 1 is generally hemispherical, as shown in the drawings, and the pivot pins 3 are aligned with the horizontal transverse, i. e., (left to right) axis of the hemispherical shell.

Operation

The shield is shown in full lines in Fig. 1 in its shielding position. The springs 8 are then effective to bias the shield 2 rearwardly, thereby holding the forward ends of the slots 2c against their respective pins 3.

When it is desired to move the shield from this position to the retracted position shown in full lines in Fig. 3, the shield is first moved forward against the springs 8 from the full line position of Fig. 1 to the dotted line position shown in that figure. This movement carries the lower sides of the wings 2a out of engagement with the rear stop member 9, so that the bolt 2 is then free to pivot upwardly about the pins 3, the direction of movement being indicated by the arrow 14 in Fig. 1. As this movement continues, the shield moves to the dotted line position of Fig. 3. When the wearer releases it in that dotted line position, the springs 8 move it downwardly to the full line position of Fig. 3, moving the ends of the wings 2a into engagement with the stop members 9 and 10. The shield is thereby latched in its retracted position. The upward and rearward movement of the shield 2 on its pivot pins is limited by the stops 13 so that the wearer knows when he has moved the shield back far enough so

that upon release it will drop into the proper position with respect to the stop members 9 and 10.

When it is desired to move the shield from the retracted position to the shielding position of Fig. 1, the operation is just the reverse of that described. Briefly, the shield is first lifted upwardly to the dotted line position of Fig. 3, and then is rotated forwardly about the pivot pins 3 until it reaches the dotted line position of Fig. 1. The shield is released in that position whereupon the springs 8 carry it back to the full line position of Fig. 1.

It may be seen that the latching and latch releasing arrangements shown are very simple and that the latch and latch releasing operations may be carried out easily by one hand of the wearer, and without careful attention to the manipulation of the shield.

Furthermore, the manipulations of the shield are not accompanied by contact between two metallic members. The stop members 9 and 10 are preferably made of plastic material, as is the shield 2 and the helmet shell 1. In certain eye shield and headgear structures of the prior art, metal latching members come into engagement with a substantial impact at each latching or unlatching of the shield. Where the headgear is a rigid shell, such an operation of abutting metal members results in a clashing or clanging of the metal parts which echoes inside the shell and is very distracting to the wearer. By constructing these parts of plastic material as described above, this echoing action is prevented.

Although the eye shield and its latching means are shown as mounted on a rigid shell, they are readily adaptable to mounting on other types of headgear having a relatively soft outer covering. The eye shield 2 of plastic sheet material is readily deformable and adaptable for use with such a head covering.

While I have shown and described a preferred embodiment of my invention, other modifications thereof will readily occur to those skilled in the art and I therefore intend my invention to be limited only by the appended claims.

I claim:

1. A combined headgear and retractable eye shield comprising a head covering, an eye shield comprising a central portion adapted to extend laterally in front of the wearer's face and a pair of rearwardly extending wings, means pivotally supporting said shield comprising a pair of pivot pins, one at each side of the head covering and projecting outwardly therefrom, each wing having a longitudinally extending slot therein to receive the pin on its side of the head covering, a pair of spring retainers fixed to the respective sides of the shield at locations aligned with the longitudinal axes of said slots and spaced forwardly of said slots, a pair of springs, each extending between a pivot pin and a retainer, and latch means comprising, for each side of the head covering, a pair of spaced latch members fixed on the head covering and cooperating with the wing on that side to limit the movement of the shield, said springs cooperating to bias said shield to a latched position in which each wing engages both the latch members on its side of the head covering, thereby preventing pivotal movement of the shield on the pins.

2. A combined headgear and retractable eye shield comprising a head covering, an eye shield comprising a central portion adapted to extend laterally in front of the wearer's face and a pair of rearwardly extending wings, means pivotally supporting said shield comprising a pair of pivot pins, one at each side of the head covering and projecting outwardly therefrom, each wing having a longitudinally extending slot therein to receive the pin on its side of the head covering, a pair of spring retainers fixed to the respective sides of the shield forwardly of said

slots, a pair of springs, each extending between a pivot pin and a retainer, latch means comprising, for each side of the head covering, a pair of spaced stop members fixed on the head covering, said springs cooperating to bias said shield to a latched position in which said pins are at the forward ends of the slots and the lower side of each said wing engages both of the stop members on its side of the head covering, thereby preventing rotation of said shield on said pins, said shield being movable forwardly against said springs to a lower turning position in which the pins are at the rear ends of the slots and the lower side of each wing engages only one stop member, said shield being rotatable from said lower turning position upwardly about said pins to an upper turning position in which the shield is above the head covering, the pins are at the rear ends of the slots and neither of said stop members is engaged, said shield being then biased downwardly by said springs from said upper turning position toward a retracted position wherein said pins are at the front ends of said slots and each wing extends between and engages both of its associated stop members.

3. A combined headgear and retractable eye shield according to claim 2, in which said stop members have flanges at their outer ends adapted to overlie the marginal portions of said wings.

4. A combined headgear and retractable eye shield according to claim 2, including an upper stop member fixed on the head covering to limit the rearward movement of the shield.

5. A combined headgear and retractable eye shield comprising a rigid outer shell, an eye shield comprising a central portion adapted to extend laterally in front of the wearer's face and a pair of rearwardly extending wings formed integrally with said central portion and extending tangentially therefrom, means pivotally supporting said shield comprising a pair of pivot pins, one at each side of the shell and projecting outwardly therefrom, each wing having a slot therein to receive the pin on its side of the shell, a pair of spring retainers fixed to the respective sides of the shield, a pair of springs, each extending between a pivot pin and a retainer, latch means comprising, for each side of the shell, a pair of spaced stop members fixed on the shell and having flanges adapted to overlie the side of one of said wings, said springs cooperating to bias said shield to a latched position in which said pins are at the forward ends of the slots and the lower side of each said wing engages both of the stop members on its side of the helmet, thereby preventing rotation of said shield on said pins, said shield being movable forwardly against said springs to a lower turning position in which the pins are at the rear ends of the slots and the lower side of each wing engages only one stop member, said shield being rotatable from said lower turning position upwardly about said pins to an upper turning position in which the shield is above the helmet shell, the pins are at the rear ends of the slots and neither of said stop members is engaged, said shield being then biased downwardly by said springs from said upper turning position toward a retracted position wherein said pins are at the front ends of said slots and each wing extends between and engages both of its associated stop members.

References Cited in the file of this patent

UNITED STATES PATENTS

413,424	Weber	Oct. 22, 1889
2,353,043	Kraski et al.	July 4, 1944
2,440,596	Anderson	Apr. 27, 1948
2,780,814	Radnofsky	Feb. 12, 1957