United States Patent

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[54] **NONFOG GOGGLES**
1 Claim, 4 Drawing Figs.

[52] **U.S. Cl.** ..... **2/14 K,** 2/14 N
[51] **Int. Cl.** **A61f 9/02**
[50] **Field of Search** ..... 2/14 K, 14 R, 14 A—14 H, 14 N, 14 P, 14 W, 10, 3, 6, 9; 352/66; 351/62

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Primary Examiner—H. Hampton Hunter
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ABSTRACT: Nonfogging goggles for skiers or the like that includes a pair of spaced apart lenses having a dead air space therebetween and a dehumidifier in the form of a tightly woven wire mesh portion made of a flexible metal of high thermoconductivity.

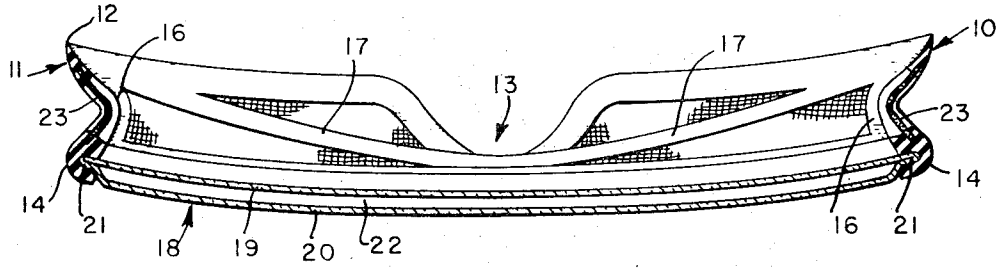


FIG. 1

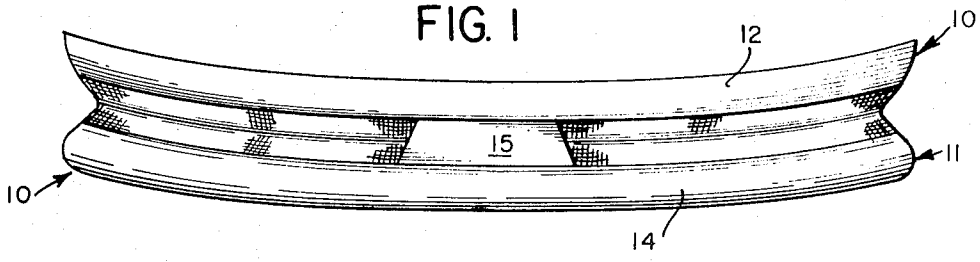


FIG. 2

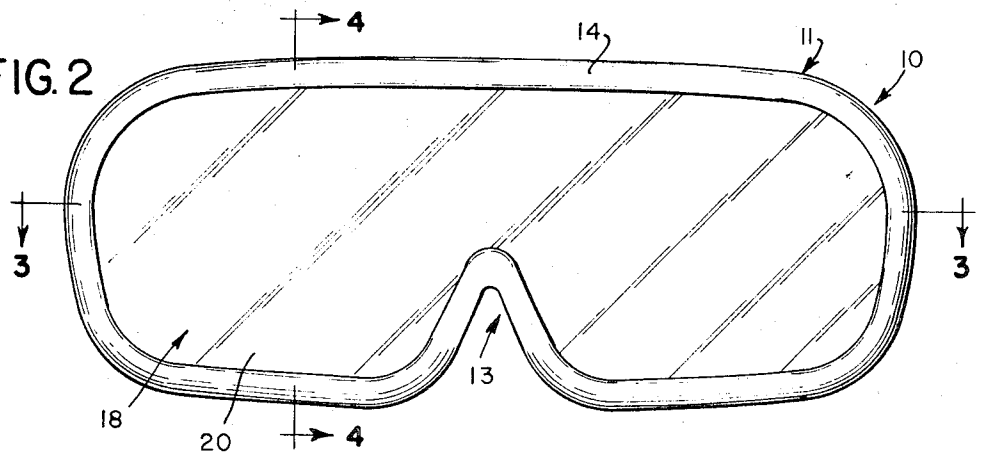
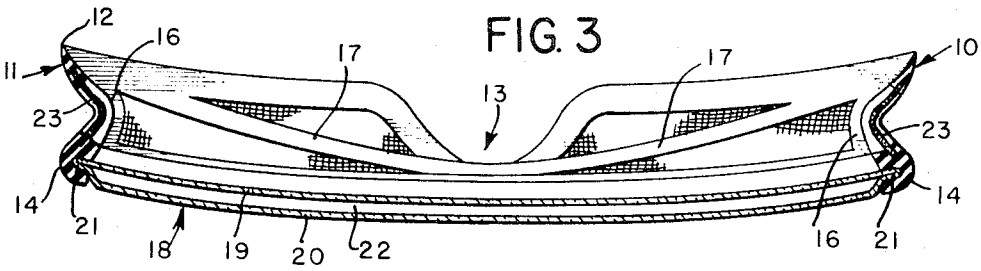


FIG. 3



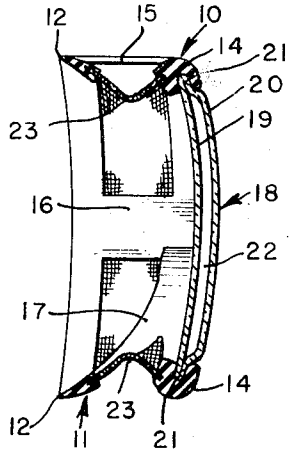


FIG. 4

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NONFOG GOGGLES

This invention relates to goggles, and more particularly to nonfogging goggles for use by skiers or other persons.

The primary object of this invention is to provide goggles which include a double sealed lens that has a dead air space trapped therebetween, and wherein there is also provided a metal strip of a tightly woven metal mesh to provide a condenser for moisture.

Still another object is to provide such nonfog goggles that include two lenses having very dry air sealed therebetween, and wherein there is provided a dehumidifier in the web between the lenses and the face seal, the double-sealed lenses being provided with a compound curve which will provide rigidity and strength to the lens to withstand the difference in pressures inside and out that occur with the changes in altitude and the like.

Still another object is to provide a nonfog goggles that is economical to produce or use and which is rugged in structure.

These and other objects of the invention will become apparent from a reading of the following specification and claims, and wherein like characters are referred to by like reference numerals, and wherein:

FIG. 1 is a top plan of the nonfog goggles of the present invention.

FIG. 2 is a front elevational view.

FIG. 3 is a sectional view taken on the line 3–3 of FIG. 2.

FIG. 4 is a sectional view taken on the line 4–4 of FIG. 2.

Referring in detail to the drawings, the numeral 10 indicates the nonfog goggles of the present invention that includes a frame 11 made of a suitable material such as rubber, plastic or the like, and the frame 11 embodies a face-engaging body portion 12 which has a recessed section 13 for snugly receiving or engaging the skier's nose. The frame 11 further includes an outer support portion 14, FIG. 3, and a crosspiece 15 may integrally join the intermediate top sections of the portions 12 and 14 together. The portions 12 and 14 may also be connected by means of braces 16 which are arranged at the sides of the goggles, and braces 17 are adapted to extend between the support portion 14 and face-engaging portion 12 for maintaining these parts in proper spaced apart relationship.

The nonfogging goggles of the present invention further includes a double lens that is indicated generally by the numeral 18, and the double lens 18 includes inner and outer transparent panels or elements 19 and 20 which are sealed together at their outer peripheries as at 21. The numeral 22 indicates a dead air space between the transparent panels 19 and 20 for a purpose to be later described.

There is further provided a dehumidifier 23 which is interposed between the portions 12 and 14 and which is secured thereto, and a dehumidifier 23 is adapted to be in the form of a very flexible, very tightly woven wire mesh made of flexible material of high thermoconductivity.

As shown in the drawings, an important feature of the present invention is that the double sealed lens 18 has a compound curve which provides rigidity and strength to the lens so as to assure that it will withstand the differences in pressure inside and out that occur with changes in altitude and the like. It is to be understood that the nonfog goggles of the present invention may be provided with a suitable strip or the like for engagement with the user's face to retain or maintain the goggles in proper place on the face or the head of the user.

From the foregoing, it will be seen that there has been provided nonfog goggles, and with the parts in use as shown in the drawings, the goggles 10 are adapted to be held on the skier's or other person's head by means of a suitable strip so that the portion 12 snugly engages the wearer's face, and the recessed portion 13 may snugly engage the nose of the wearer. The outer or support portion is interconnected to the inner portion 12 by means of integral crosspieces or pieces such as indicated by the numerals 15, 16 and 17. The goggles 10 include the

double lens 18 that consists of the pair of spaced apart elements 20 that have the dead air space 22 therebetween, and the outer periphery of the outer lens 18 is molded or secured to the portion 14, as shown in FIGS.3 and 4. Also, the members 19 and 20 are secured together at their outer peripheries as indicated by the numeral 21. The goggles 10 further include the dehumidifier 23 which is interposed between the portions 12 and 14, and the dehumidifier 23 is suitably secured to or molded into place with a firm connection to the portions 12 and 14.

It will be understood that the parts can be made of any suitable material and in different shapes or sizes as desired or required.

It will thus be seen that there has been provided nonfog goggles which will provide a wind screen that will not fog and thus will overcome a severe problem that occurs when the temperatures are around the freezing point and where there is high relative humidity. There are two complete aspects or features of the present invention, one of which is the double sealed lens 18 that consists of two similar lenses 19 and 20 that are sealed with a dead air space 23 trapped between them. The air space 22 provides insulation so that the inner lens 19 is near the temperature of the air inside the goggles, and this prevents moisture from condensing on the lens.

In addition, the goggles of the present invention have a metal strip or a tightly woven metal mesh in the goggle wall between the lens and the face to provide a place for the moisture to condense on. Because the metal is a much better conductor than the lens, it will be much colder and moisture will condense on the metal instead of condensing on the lens. The portion such as the portion 12 may be made of soft plastic and may have foam rubber secured to the inner surface thereof. The dehumidifier 23 may be made of aluminum mesh or the like. There is a seal between the two lenses or members 19 and 20 as indicated by the numeral 21.

With the present invention air cannot seep around the seals. When goggles are used for skiing they are exposed to altitudes varying from sea level to 13,000 feet. In prior designs the difference in pressure is sufficient to cause the air to leak into the dead air space between the lenses. If air has a high enough relative humidity and the ambient air is cold enough, it can cause fogging on the inside of the outer lens, and the construction and principles of the present invention overcomes these difficulties or disadvantages. Thus, there is provided the two lenses which are completely sealed with very dry air in the sealed air space, and this prevents intralens fogging. This may be accomplished by molding the lens out of one piece of plastic with a hollow space in the middle or by joining the lens by melting the outer edges together.

In addition, the goggles of the present invention are not complex nor are they bulky. The construction of the dehumidifier is very simple and is adapted to be made of a very flexible, tightly woven wire mesh, and this is placed in the web between the lenses and the face seal. The mesh is tightly woven to keep the snow out but loose enough so that it will breathe and the moisture that condenses on the wires can escape the ambient air. In addition, air will ventilate in through the wire mesh.

In addition, an important feature of the present invention is the double sealed lenses with the compound curve, and the compound curve gives rigidity and strength to the lenses to withstand the difference in pressures inside and out that occur with the change in altitude.

While a preferred embodiment in accordance with the present invention has been illustrated and described, it is to be understood that various modifications may be resorted to without departing from the spirit and the scope of the appended claims.

What I claim is:

1. In nonfog goggles for skiers and the like comprising a frame and embodying a face engaging portion having a recessed nose engaging section, a support portion arranged in spaced apart relation with respect to said face engaging por-

tion, said goggles further including spaced crosspiece means interconnecting the body portion and support, a double lens embodying a pair of transparent members sealed together at their outer peripheries and mounted in said support portion, there being a dead air space between the transparent members, said double lens having a compound curvature, a flexible tightly woven wire mesh of high thermoconductivity in the

frame the support portion and body portion, said mesh being tightly woven to keep snow out but loose enough so that moisture that condenses on the wire mesh can escape to the ambient air and wherein air can ventilate inwardly through the mesh, said double lens having very dry air trapped therein to prevent the lens fogging.