United States Patent

Heath

[15] **3,699,955**

[45] **Oct. 24, 1972**

[54] **HEADBAND DEVICE FOR SINUS RELIEF**

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[22] Filed: **Dec. 31, 1970**

[21] Appl. No.: **103,190**

[52] **U.S. Cl.** ..... **128/97,** 128/76 R

[51] **Int. Cl.** **A61f 5/24**

[58] **Field of Search** 128/76, 97, 163

[56] **References Cited**

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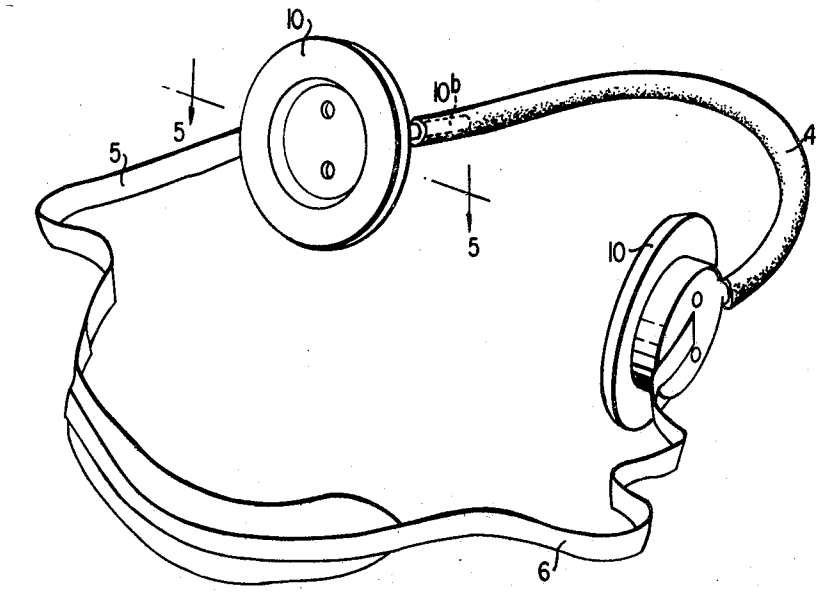
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Primary Examiner—Richard A. Gaudet
Assistant Examiner—J. Yasko
Attorney—Alexander & Dowell

[57] **ABSTRACT**

The headband device for use by persons having difficulty in breathing due to sinus trouble, head colds, or deflected septums, includes a pair of disk members adapted to contact the alae nasal region of the person's face at opposite sides of the person's nose. A flexible cross-piece of general arcuate shape has its ends respectively connected at a fixed angle to the disk members and is adapted to be disposed across the face of the person opposite his mouth. Elastic straps extend from the respective disk members to the back of the person's head, with provision for securing the outer ends of the straps together, whereby when the elastic straps are tightened the pressure on the alae nasal passages at each side of the nose is increased due to the angular connection of the cross-piece to the disk members, thereby pulling the alae on opposite sides of the nose away from the nose to maintain the nasal passages unobstructed.

14 Claims, 8 Drawing Figures



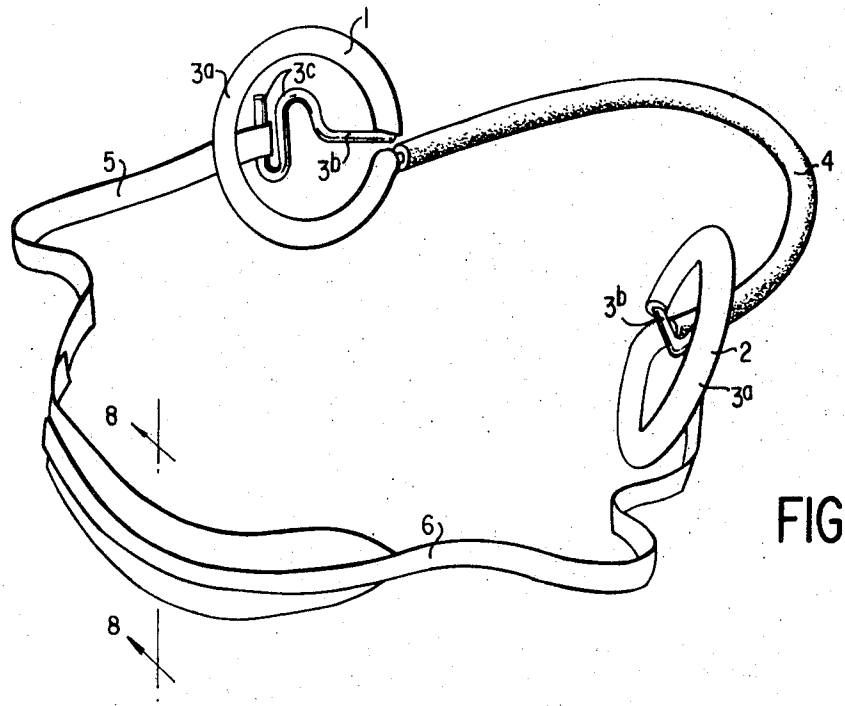


FIG.1

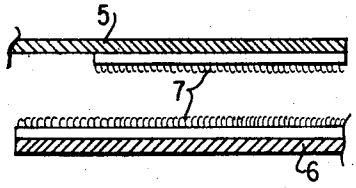


FIG.8

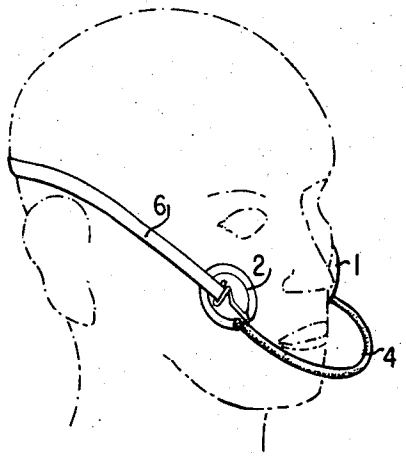


FIG.3

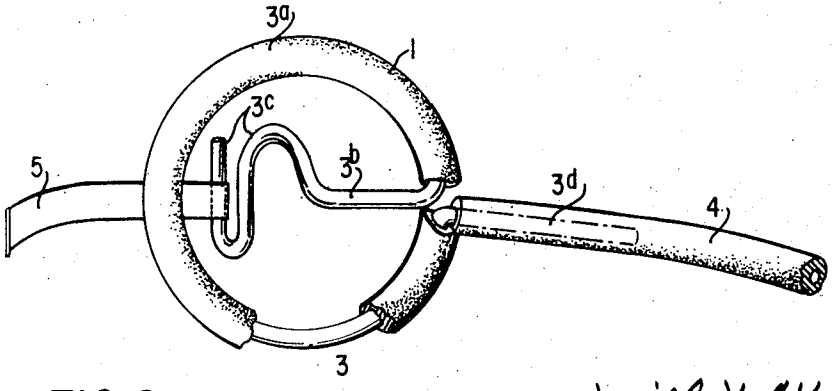


FIG.2

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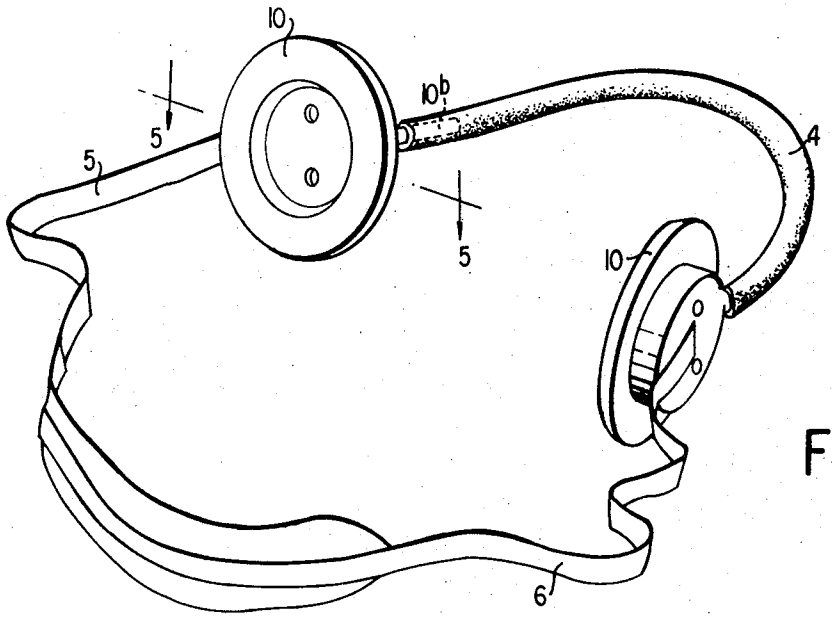


FIG. 4

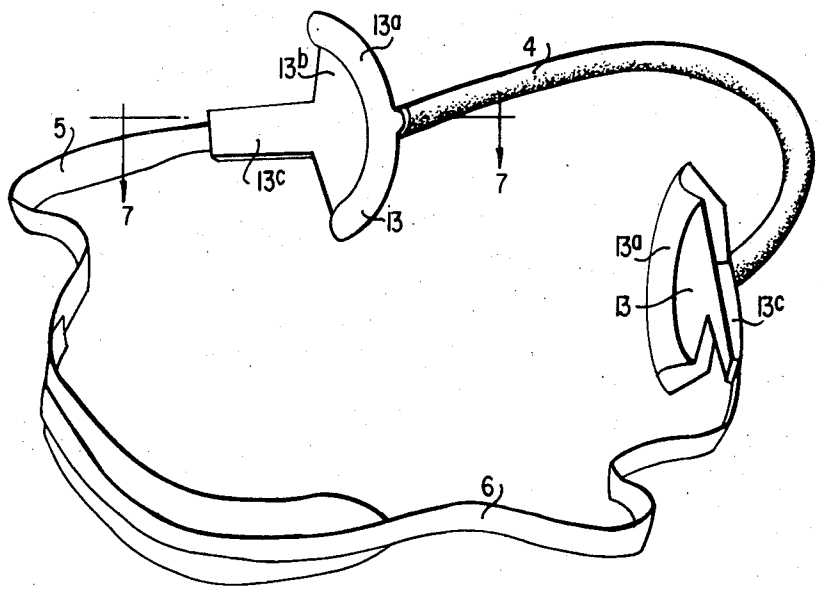


FIG. 6

FIG. 5

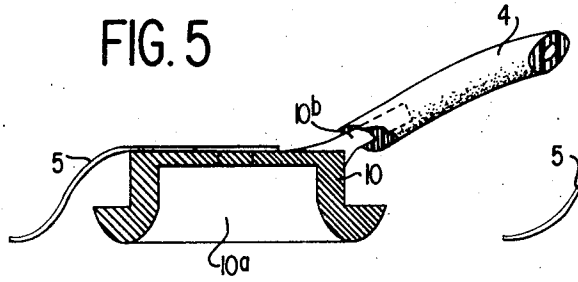
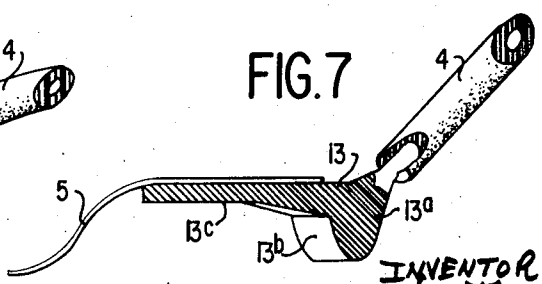


FIG. 7



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HEADBAND DEVICE FOR SINUS RELIEF

DESCRIPTION OF INVENTION

This invention relates to a device to relieve persons suffering from sinus trouble, head colds, or deflected septums, and having difficulty in breathing. The principal object of the invention is to provide a device in the nature of a headband adapted to encircle the person's head, the device comprising a pair of disks adapted to engage the alae nasal portions of the person's face in the area of the nose, the disks being connected together by means of a flexible arcuate member positioned across the face of the wearer adjacent the mouth, the ends of the flexible member being secured at an angle to the plane of the disks, and the disks being secured together by means of flexible straps passing above the ears and around the back of the head of the wearer so that the device when applied to the wearer's head causes the disks to pull the skin and alae nasal on opposite sides of the nose away from the nose, to maintain the nasal passages unobstructed, the angle of departure of the cross-piece from the disks regulating the position of the disks on the skin of the wearer's face.

Other objects of the invention are to provide a device of the above type which can be made of rubber, plastic or light metal which does not irritate the skin; also a device which can be made in one piece except for the elastic headband; also to provide a device in which the disks are designed to allow for maximum ventilation, the disks being movable about the face.

A further object of the invention is to provide a device of the above type consisting of two rubber disks attached to a headband to be used while a person is sleeping, in order to improve the person's breathing through the nose, for persons who have difficulty in breathing through the usual nasal passage, the effectiveness of the device resulting from causing lateral retraction of the alae nasal, the disk on the right drawing the ala to the right side, and the disk on the left doing the same to the left alae, no medication being used, and there is nothing which enters the nasal vestibule.

A still further object of the invention is to provide a device of the above type wherein, when the headband is tightened or shortened, pressure on the alae nasal is increased by the disk on the side adjacent the nostril, such increased pressure being necessary when the person's nostril is hard to open, the pressure on the alae nasal being due to the angle of departure of the cross-piece from the disks.

Further minor objects of the invention will be hereinafter set forth.

I will explain the invention with reference to the accompanying drawings which illustrate several practical embodiments thereof to enable others familiar with the art to adopt and use the same; and will summarize in the claims the novel features of construction, and novel combinations of parts, for which protection is desired.

In said drawings:

FIG. 1 is a perspective view of one embodiment of the invention.

FIG. 2 is an enlarged plan view of one of the disks shown in FIG. 1, also showing the headband and cross-piece attached thereto.

FIG. 3 is a perspective view showing the device of FIG. 1 applied to the head of the wearer.

FIG. 4 is a perspective view of a modified form of the device.

FIG. 5 is an enlarged cross-section on the line 5—5, FIG. 4.

FIG. 6 is a perspective view of a still further embodiment of the device.

FIG. 7 is an enlarged sectional view on the line 7—7, FIG. 6.

FIG. 8 is an enlarged section on the line 8—8, FIG. 1, but showing the ends of the elastic strips separated.

As shown in FIGS. 1—3, this embodiment comprises a pair of disks 1 and 2 of circular shape adapted to contact the alae nasal region of the wearer's face adjacent the nostrils, as shown more particularly in FIG. 3. Each disk 1 and 2 comprises a wire split ring 3 which is preferably covered with plastic 3a. One end of the wire 3 at the split is bent radially inwardly as at 3*b*, FIG. 2, with its outer end bent to form an open hook 3*c* for the purpose hereinafter specified. The other end of the wire 3 at the split of the ring is bent radially outwardly to form a prong 3*d*, FIG. 2, and said prong 3*d* is also bent at an angle of about 20° to 30° from the plane of the ring 1 or 2; and a flexible plastic tube 4 connects the prongs 3*d* of the respective disks 1 and 2, the ends of the tube 4 snugly receiving the said prongs.

Preferably the cross-piece 4 is of general arcuate shape and the cross-piece in the normal position would extend across the face of the wearer in the vicinity of the wearer's mouth, as shown in FIG. 3.

In order to maintain the device on the head of the wearer, I provide elastic straps 5 and 6 extending from the disks 1 and 2 around the back of the head of the wearer above the ears of the wearer, as shown in FIG. 3. Each strap 5 and 6 has a loop on its end adjacent the hook 3*c* into which the hook extends to secure the strap to the disk. Each strap 5 and 6 is adapted to extend more than halfway around the back of the head of the wearer so as to overlap at the back of the head, and the outer ends of the straps are provided with Velcro pile fastening material 7 (FIG. 8) which is so designed that the pile sides of the Velcro fastener will interlock when pressed together, thus serving to removably fasten the ends of the elastic straps 5 and 6. However, any other form or type of fastener may be used.

By the above construction the user may apply the device to his head, placing the disks 1 and 2 on his cheeks adjacent the alae nasal region, at opposite sides of the nose, with the cross-piece 4 extending across his face in the area of the mouth and the elastic bands 5 and 6 extending around the head above the ears and secured together by merely pressing the Velcro pile fasteners 7 together at the back of the head of the wearer. The disks 1 and 2 will pull the alae nasal to the right and left respectively, i.e., away from the nostril, and when the headband is shortened pressure is increased by the disks on the alae nasal, the pressure on the alae nasal being due to the angle of departure of the cross-piece 4 from the disks 1 and 2. Thus my device will bring relief to persons who have difficulty in breathing due to sinus conditions, head colds, or deflected septums, since it will pull the skin on opposite sides of the face away from the nose to maintain the alae nasal passages unobstructed. The above will be of great assistance to such persons while sleeping in order to improve the breathing through the nose, relief being

due to the lateral retraction of the alae nasal, the disk on the right drawing the ala to the right side, and the disk on the left doing the same to the left ala.

FIGS. 4 and 5 show a modification. In this modification the disks 10 are molded of rubber and are in the form of inverted cups of circular cross-section in which the inner skin engaging face of the disks 10-11 are recessed as at 10*a*. On the outer edge of each cup 10 are radial outwardly disposed prongs 10*b*, FIG. 5, which are disposed at an angle to the plane of the disk 10, as shown in FIG. 5, the extensions 10*b* being adapted to snugly fit the ends of the cross-piece 4, which is similar in all respects to the cross-piece 4 of FIGS. 1–3. Straps 5 and 6 are also provided secured to the cups 10-11 by adhesive or the like, said straps containing the Velcro pile fasteners 7 in a manner similar to that above described in connection with FIGS. 1 to 3. The operation of the device shown in FIGS. 4 and 5 is identically the same as that above described in connection with FIGS. 1–3.

In FIGS. 6 and 7 a further modification is shown. In this modification the disks 13 are not circular, as in FIG. 4, but are essentially segments of the circle, the same comprising a segmental head 13*a* which is undercut as at 13*b* on its underside to engage the skin of the person, the head having a shank portion 13c to which the ends of the straps 5 and 6 respectively are secured; and the straps preferably have the Velcro fiber fastening 7 for securing the straps around the head of the wearer in the manner described in connection with FIGS. 1 to 3. The device shown in FIGS. 6 and 7 operates substantially identically the same as those described in the previous modifications.

I claim:

1. A headband device for use by persons having difficulty in breathing due to sinus trouble, head colds, or deflected septums, comprising a pair of disk members having a recessed section therein adapted to respectively engage the alae nasal region of the person's face at opposite sides of the nose; a flexible cross-piece having its ends respectively connected at a fixed angle to the planes of said disk members; elastic straps extending from the respective disk members adapted to extend to the rear of the person's head; and means for adjustably securing the outer ends of the straps together, whereby when the elastic straps are tightened the pressure on the alae nasal passages by the disks at each side of the nostril will be increased thereby pulling the skin on opposite sides of the face away from the nose to maintain the nasal passages unobstructed.

2. In a device as set forth in claim 1, said disk members and cross-piece being formed of plastic.

3. In a device as set forth in claim 2, said disk members, and cross-piece being formed in one piece.

4. In a device as set forth in claim 1, said securing means comprising interlocking pile tapes which interlock when pressed together without necessitating use of adhesive.

5. In a device as set forth in claim 1, said disk members each comprising a split ring covered with plastic; one end of the ring being inturned radially and terminating in a hook receiving the end of its related elastic strap; and the other end of the ring being turned radially outwardly and at an angle to the plane of the ring to form a prong for attachment to an end of said cross-piece.

6. In a device as set forth in claim 1, said disk membets each comprising an inverted rubber cup having a radially directed prong extending therefrom at an angle to the plane of the cup for attachment to an end of said cross-piece.

7. In a device as set forth in claim 1, said disk members each comprising a segment of an inverted rubber cup having a radially directed prong extending therefrom at an angle to the plane of the cup for attachment to an end of said cross-piece, and having a shank portion for attachment to its related elastic strap.

8. A headband device for use by persons having difficulty in breathing due to sinus trouble, head colds, or deflected septums, comprising a pair of disk members having a recessed section therein adapted to respectively engage the alae nasal region of the person's face at opposite sides of the nose; a flexible cross-piece of general arcuate shape having its ends respectively connected at a fixed angle to the planes of said disk members and adapted to be disposed across the face of the person opposite his mouth; elastic straps extending from the respective disk members adapted to extend above the person's ears to the rear of the person's head; and means for adjustably securing the outer ends of the straps together, whereby when the elastic straps are tightened the pressure by the disks on the alae nasal passages at each side of the nostril will be increased due to the angular connection of the cross-piece to the disk members, thereby pulling the skin on opposite sides of the face away from the nose to maintain the nasal passages unobstructed.

9. In a device as set forth in claim 8, said disk members and cross-piece being formed of plastic.

10. In a device as set forth in claim 8, said disk members, and cross-piece being formed in one piece.

11. In a device as set forth in claim 8, said securing means comprising "Velcro" interlocking pile tapes which interlock when pressed together without necessitating use of adhesive.

12. In a device as set forth in claim 8, said disk members each comprising a split ring covered with plastic tubing; one end of the ring being inturned radially and being bent to form a hook for receiving the end of its related elastic strap; and the other end of the ring being bent radially outwardly and at an angle to the plane of the ring to form a prong for attachment to an end of said cross-piece.

13. In a device as set forth in claim 8, said disk members each comprising an inverted rubber cup having a radially directed prong extending therefrom at an angle to the plane of the cup for attachment to an end of said cross-piece.

14. In a device as set forth in claim 8, said disk members each comprising a segment of an inverted rubber cup having a radially directed prong extending therefrom at an angle to the plane of the cup for attachment to an end of said cross-piece, and having a shank portion for attachment to its related elastic strap.

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