March 16, 1948. R. L. MALCOM 2,437,748

ADJUSTABLE HEADBAND CONSTRUCTION

Filed June 11, 1945

Fig. 1

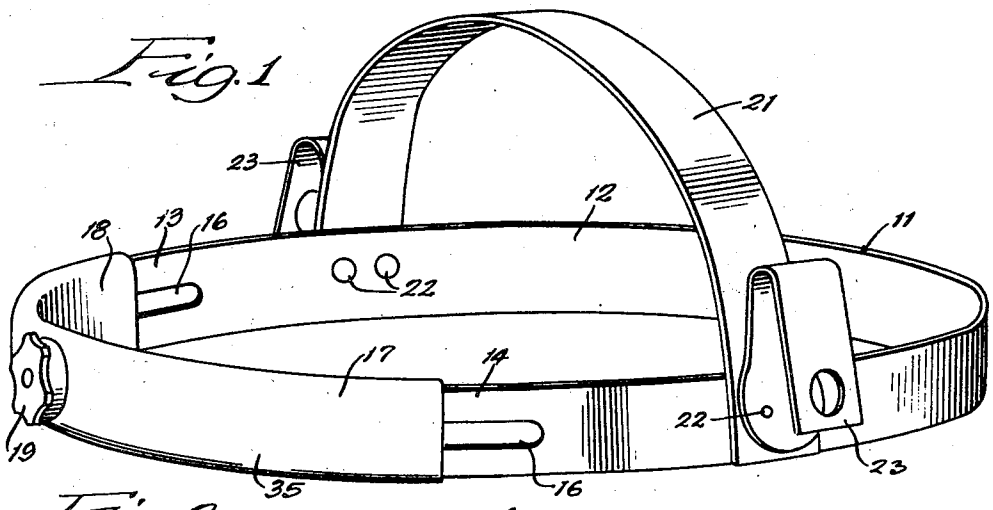


Fig. 2

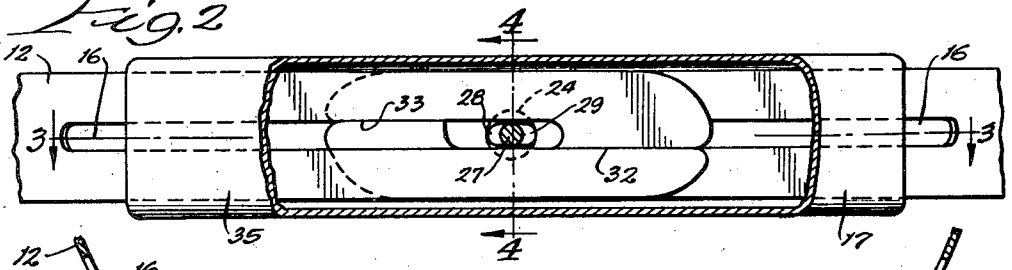


Fig. 3

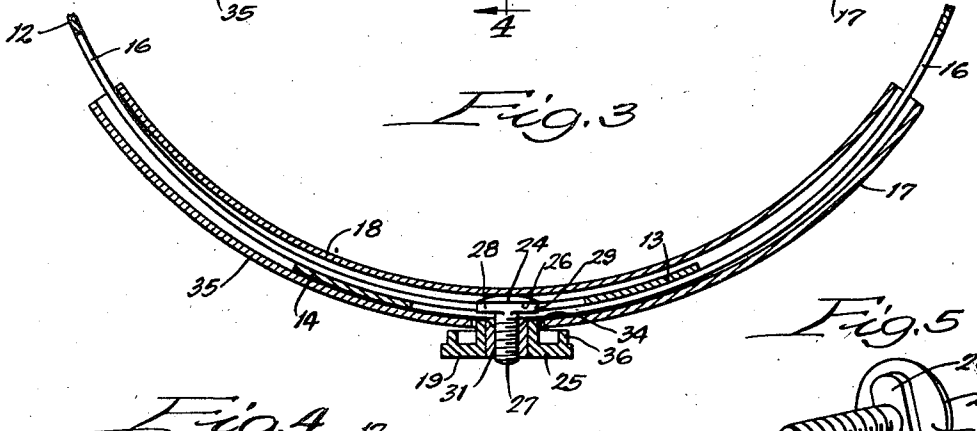


Fig. 4

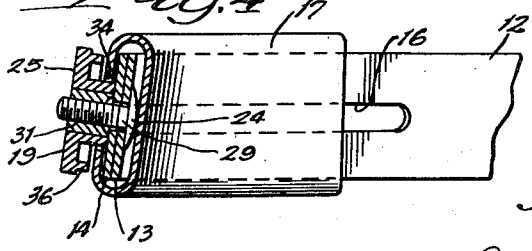
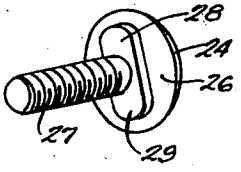


Fig. 5



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ADJUSTABLE HEADBAND CONSTRUCTION

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2 Claims. (Cl. 2—8)

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The invention relates to an adjustable headband construction.

An object of the invention is the provision of a headband which is easily and conveniently adjusted to the desired size.

It is among the other objects of the invention to provide a headband having a substantially smooth inner surface, to provide a headband which is adjustable without being removed from the wearer's head, and to provide a headband that will remain in its adjusted position until released.

A further object of the invention is to provide a headband utilizing a tension means that securely clamps the movable portions of the headband into a locked relationship.

A still further object of the invention is to provide a headband utilizing a tension means including a locking portion that enables the tension means to be conveniently operated.

Further objects and advantages of the invention will be apparent from the following description and the drawing appended thereto.

In the drawing, in which like reference characters refer to like parts:

Fig. 1 is a perspective view of one embodiment of the invention;

Fig. 2 is an enlarged sectional view in elevation of the headband shown in Fig. 1;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 2;

Fig. 5 is an enlarged perspective view of one form of tension means utilized in the illustrated embodiment of the invention.

In the embodiment of the invention illustrated in the drawings, the headband 11 comprises a curved strip 12 having overlapping ends 13 and 14. The end portions 13 and 14 have slots 16 formed lengthwise of the strip. Sleeve 17 is positioned around the overlapped end portions 13 and 14 and provides a substantially smooth inner surface 18 for contact with the wearer's head. Tension means 19 is provided in the headband for adjustment of the overlapped end portions 13 and 14 within the sleeve 17. Cross piece 21, adapted to fit over the wearer's head, may be utilized with the headband. Cross piece 21 is secured to the sides of strip 12 by fastening means 22. Anchor members 23 may be provided in conjunction with the cross piece 21 for attaching the headband to a helmet or other device with which the headband may be used.

The headband may be formed of a durable,

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semi-rigid material such as phenol-formaldehyde, urea-formaldehyde, hard rubber, metal, or the like. A material that has been found to be particularly suitable for the headband construction is a cured plastic having the mechanical properties of cellulose acetate. The tension means 19 and anchor members 23 may be suitably formed of metal.

In the preferred embodiment of the invention, the tension means 19 comprises a bolt member 24 and nut member 25. As shown in Fig. 5, bolt member 24 includes a substantially flat head 26 and a threaded shank portion 27. The threaded shank 27 is of sufficient length to extend through both end portions 13 and 14 and the outer wall of sleeve 17. The bolt member 24 is provided with a locking portion 28, intermediate of the head 26 and shank 27. The locking portion 28 may consist of a wafer-like projection adjacent to the under surface of the head 26. The locking portion has a thickness substantially that of a wall of the end portions 13 or 14 while the length of the locking portion 28 is greater than the diameter of the shank 27, its width is substantially the same as the diameter of the shank 27. The locking portion 28 is adapted to be positioned within at least one of the slots 16 so that the sides 29 of the locking portion will bear against the slot walls. The purpose for which the locking portion is provided is to prevent the bolt member from rotating when nut member is tightened on shank 27. Nut member 25 includes threaded portion 31 for engaging shank 27 of the bolt member.

The slots 16, defined by end portions 13 and 14, are of sufficient width to accommodate shank 27 of the bolt member. Where the slots 16 do not extend to the ends of the strip 12, the assembly of the headband is facilitated by providing slits 32 and 33 between the slots 16 and the ends of the strip.

Sleeve 17 may be formed of the same material as that of the strip 12 and is of sufficient cross-sectional dimensions to conveniently contain overlapped portions 13 and 14. Aperture 34 may be provided in the outer wall 35 of the sleeve to receive nut member 25 of the tension device 19. By making aperture 34 of sufficient size to permit nut member 25 to extend through wall 35 of the sleeve, the clamping action of the tension device 19 is exerted only on the end portions 13 and 14 of strip 12.

Flange 36 is provided on that portion of knob 25 adjacent the outer wall of the sleeve. The dimensions of flange 36 are such that when knob 25 is tightened against the end portions, flange

36 is close to but out of contact with the outer wall of the sleeve. In this manner, the flange provides a guard against foreign matter entering aperture 34.

In assembling the headband, cross piece 21 and anchor members 23 are secured to strip 12. The end portions 13 and 14 may then be inserted into sleeve 17 in an overlapping relationship and with slots 16 in alignment with each other. Bolt member 24 may then be inserted through aperture 34 and forced through slots 16 so that head portion 26 will be between inner wall 18 of the sleeve and the end portions 13 and 14. Insertion of bolt member 24 is facilitated by forcibly expanding slots 16 to permit the passage of head 26 therethrough. Bolt member 24 is then rotated until sides 29 of locking portion 28 are aligned with the walls of the slot 16 of end portion 13. Locking portion 28 is maintained within slot 16 by pressure of wall 18 of the sleeve.

The headband may also be assembled by positioning bolt member 24 inside of sleeve 17 with shank portion 27 extending through aperture 34. End portions 13 and 14 are then inserted into the sleeve in overlapping relationship and are forced over shank 27 through slits 32 and 33. This manner of assembled is facilitated by forcibly expanding the slits as end portions 13 and 14 are forced over shank 27.

After securing nut member 25 to shank 27, the headband is adjusted by moving end portions 13 and 14 lengthwise within sleeve 17. Upon obtaining the desired size of the headband, nut member 25 is tightened on bolt member 24, thereby clamping end portions 13 and 14 between head portion 26 and nut member 25. Readjustment of the headband may be effected by loosening nut member 25 and moving end portions 13 and 14 within the sleeve.

One important use of the headband that is contemplated is in conjunction with helmet constructions. Protective helmets for military or industrial purposes may be made more comfortable for the wearer by utilizing the headband embodying the invention.

The above detailed description is given for purposes of illustration and the invention is to be limited only by the scope of the appended claims.

I claim:

1. A headband which comprises a curved strip having end portions in overlapping relationship, said end portions each having a slot therein formed lengthwise of the strip, a sleeve around the overlapped portions of the strip and having an aperture in the outer wall thereof, and a tension means to clamp the overlapped portions of the strip together in the sleeve, said tension means comprising an inner member engaging one of the end portions of the strip and extending through the slots and the apertures in the outer wall of the sleeve and an outer member extending through the aperture in the outer wall of the sleeve in threaded engagement with the inner member and engaging the other end portion of the strip for directly clamping together the overlapping end portions of the strip in the sleeve.

2. A headband which comprises a curved strip having end portions in overlapping relationship, said end portions each having a slot therein formed lengthwise of the strip, a sleeve around the overlapped portions of the strip and having an aperture in the outer wall thereof, and a tension means to clamp the overlapped portions of the strip together in the sleeve, said tension means comprising a bolt member in threaded engagement with a nut member, said bolt member engaging one of the end portions of the strip and having a shank portion extending through the slots in the end portions of the strip and the aperture in the outer wall of the sleeve, and said nut member extending through the aperture in the outer wall of the sleeve and bearing against the other of said end portions for directly clamping together the overlapping end portions of the strip in the sleeve.

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