

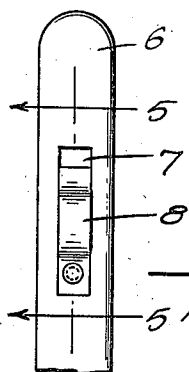
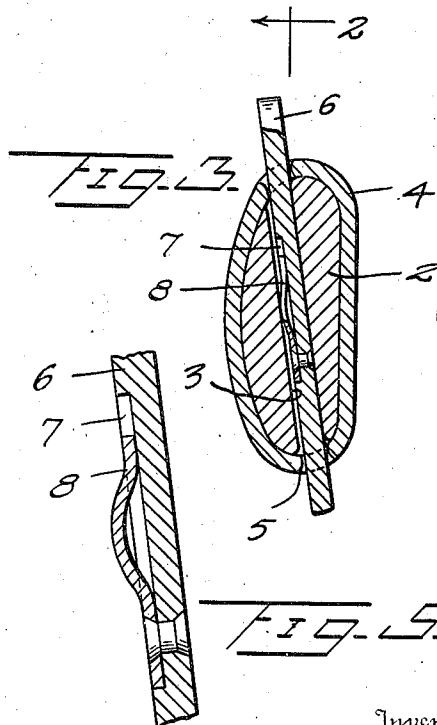
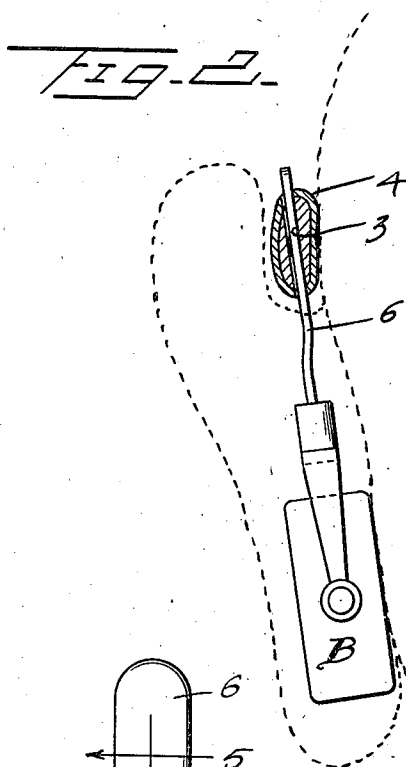
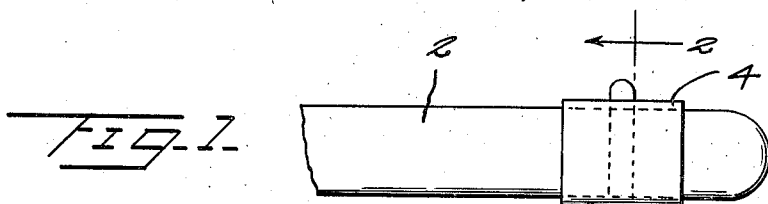
July 29, 1947.

G. P. KIMMEL

2,424,935

HEARING AID ATTACHMENT FOR SPECTACLES

Filed Dec. 18, 1944



Inventor
George P. Kimmel

By *Kimmel & Crowell*
Attorneys

UNITED STATES PATENT OFFICE

2,424,935

HEARING AID ATTACHMENT FOR
SPECTACLES

George P. Kimmel, Brookeville, Md.

Application December 18, 1944, Serial No. 568,746

9 Claims. (Cl. 179-107)

1

The invention relates to a support of a hearing aid or more specifically to a bone oscillator support. The bone oscillator is used by people whose hearing impairment is confined to defects other than in the inner and/or middle ear and whose auditory nerve is unimpaired. Sound vibration can be made to act on the auditory nerve through the bones of the head, especially through the mastoid bone.

Various types of devices have been designed for holding the bone oscillator in place with proper pressure against the mastoid temporal bone. The most common among these devices is the headband which may be bent to the curvature of the dome of the head and bears with both ends against the head, one of these ends carrying the oscillator which is thus pressed against the mastoid bone. The consultant fitting a hard-of-hearing person with a bone oscillator will bend a headband to what he considers a proper shape. The ends of this band press in a most unpleasant way against the head and have been the cause of the refusal of many persons whose hearing was impaired and who were compelled to use a bone oscillator, to wear the aid. The main reason has already been given; a second reason is the conspicuity of the headband.

This invention proposes to overcome the disadvantages of the present hearing aid supports by utilizing the rear end portion of one or both of a pair of spectacles as a means for supporting the aid, especially that one known as a bone conductor which should contact the mastoid bone located behind the ear. Many people in need of a hearing aid also need spectacles and others not in need of spectacles can wear them with Planoglass which does not function as a lens. At any rate, people who wear spectacles do not feel embarrassed or are not sensitive as are people wearing a hearing aid, especially a bone conductor at present supported by a conspicuous headband as a support.

This invention relieves people using a bone conductor of physical and mental discomfort. In fact the use this device makes the oscillator so inconspicuous that one conferring with a user would ordinarily never discover that a hearing aid was being used.

With these and other objects in view, as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts which will be first described in connection with the accompanying drawing, showing a support for a hearing device embodying the invention, and the features

2

forming the invention will be specifically pointed out in the claims.

In the drawing:

Figure 1 is an elevation of the rear end portion of the bow of a pair of spectacles, not shown, carrying the bone oscillator in a most inconspicuous place, namely behind the ear;

Figure 2 is a sectional view on line 2-2 of Figure 1 showing the outline of the ear as viewed from the rear in dotted lines;

Figure 3 is an enlarged section parallel to that of Figure 2 and forwardly thereof;

Figure 4 is a front view of the bar carrying the oscillator;

Figure 5 is a longitudinal section on line 5-5 of Figure 4.

Numeral 2 denotes the rear portion of a bow of a pair of spectacles, the front and other bow of which are not shown. This portion is placed on and behind the ear as illustrated in Figure 2 and should preferably have a substantial cross section (Figure 3) and can be made of plastic or other suitable material which will resist torsional strains or twisting. This rear end portion of the bow has an aperture 3 adjacent the end extending downwardly and inwardly toward the head. The apertured portion of the bow is surrounded by a reinforcing sleeve 4 of metal or other suitable material which has outwardly widening openings 5 that register with the aperture mentioned. 6 is a bar extending from the midpoint of a clevis, having spring arms, the ends of which are seated rotatably in sockets on the bone conductor B so that the latter can assume that position of maximum contact with the mastoid bone M which is conducive to good reception. Rod 6, as shown in the drawing, is curved longitudinally whereby its relative position within the opening in the bow determines the degree of pressure necessary to suit the hearing of the individual wearer. Rod 6 may also be adjusted relative to the bow so that irritation caused by contact of the bone conduction element on one spot may be readily and quickly relieved. Rod 6 of any suitable cross section has in its outer side a depression 7 in one end of which a spring 8 is secured by riveting or otherwise. The intermediate portion of the spring is bowed outwardly out of the depression and will press against the adjacent side of the aperture in the bow. The upper end of bar 6 should be rounded off for easy insertion in the aperture and the openings in the sleeve.

Changes may be made in the arrangement of parts as described and illustrated in the accompanying drawing without departing from the

3

spirit of the invention, the scope of which is defined by the following claims.

I claim:

1. In combination with a pair of spectacles including bows, of a bar adjustably supporting a hearing aid contacting the head, one of said bows having a downwardly and inwardly inclined aperture in the rear portion thereof, a sleeve surrounding the aperture portion and provided with openings registering with the aperture and a spring on the bar and frictionally engaging a side wall in the aperture.

2. In combination with a pair of spectacles, a bow connected thereto and having an aperture in its rear portion, a sleeve surrounding the apertured part and provided with openings registering with the aperture, a bar insertable in the aperture and openings for supporting a hearing aid against the head and having a depression in one side and a spring fastened in the depression and bearing against a wall of the aperture.

3. As a new article of manufacture, a hearing aid element, a forked member, means rockably mounting said element between the arms of said member, a longitudinally curved supporting rod rotatably carried by said member, and a retaining means carried by said rod for holding the latter on a support.

4. A new article of manufacture as set forth in claim 3, wherein said retaining means comprises a bowed spring.

5. As a new article of manufacture, a hearing aid means for attachment in depending relation to a bow of an ophthalmic mounting, said means comprising a bone conduction element, a U-shaped member rockably secured at the free ends thereof to said element, a supporting rod rotatably secured at one end thereof to the bight of said U-shaped member, and means carried by said rod for detachably securing the latter to a bow of the mounting.

6. The combination with an ophthalmic mounting having a pair of bows, at least one of said bows having an opening therethrough inclined downwardly and inwardly toward the head adjacent the rear end thereof, at least one bone conduction element, and means carried by said element engageable in said opening for detachably securing said element in depending relation to said one bow.

7. The combination with an ophthalmic mount-

4

ing having a pair of bows, at least one of said bows having an opening therethrough inclined downwardly and inwardly toward the head adjacent the rear end thereof, at least one bone conduction element, means carried by said element engageable in said opening for detachably securing said element in depending relation to said one bow, and at least one reinforcing sleeve telescoping the rear end of said one bow and formed with openings registering with the ends of said first opening.

8. An ophthalmic mounting including a pair of bows of relatively rigid construction and having a characteristic to resiliently resist torsional strains longitudinally thereof, a bone conduction element, a fork member rockably engaging said element, and a longitudinally bent supporting member rotatably carried by said fork member and removably secured to one of said bows whereby to normally press said element against the head, the pressure of said element against the head being proportionate to the resistance of said one bow against torsional twisting.

9. The combination with an ophthalmic mounting having a pair of bows, each bow being of relatively rigid construction and having substantially greater width than thickness, one of said bows having an opening therethrough, a bone conduction element, and means engaging in said opening for dependently supporting said element from said one bow, said means being so constructed and arranged as to firmly hold said element against the head, and the thickness of said one bow being such as to resiliently resist torsional strain thereon to thereby hold said element against the head.

GEORGE P. KIMMEL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,337,953	Wirshing	Dec. 28, 1943
2,249,572	Lieber	July 15, 1941
2,179,615	Craig	Nov. 14, 1939
2,168,781	Peterson	Aug. 8, 1939
2,148,024	Koch	Feb. 21, 1939
1,567,105	Bohlman	Dec. 29, 1925
1,503,908	Manson	Aug. 5, 1924