Dec. 1, 1964 K. C. KERR 3,159,426

HEAD REST

Filed Feb. 12, 1962

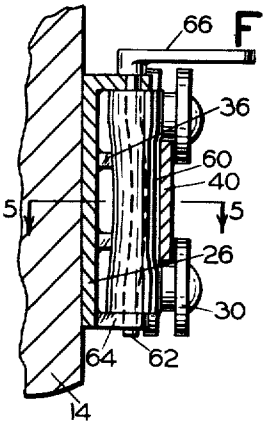


FIG. 4

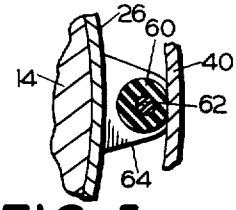


FIG. 5

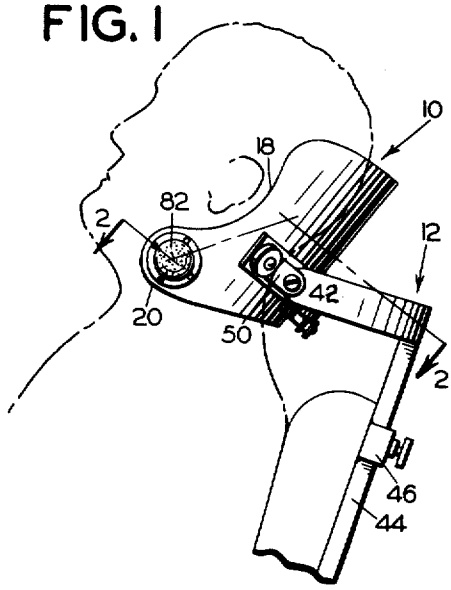


FIG. 1

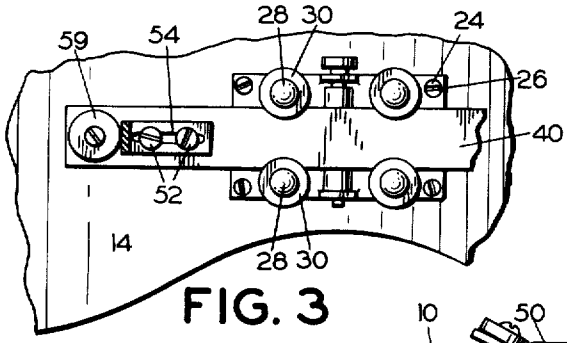


FIG. 3

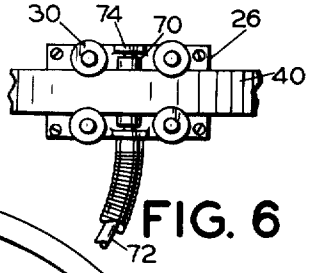


FIG. 6

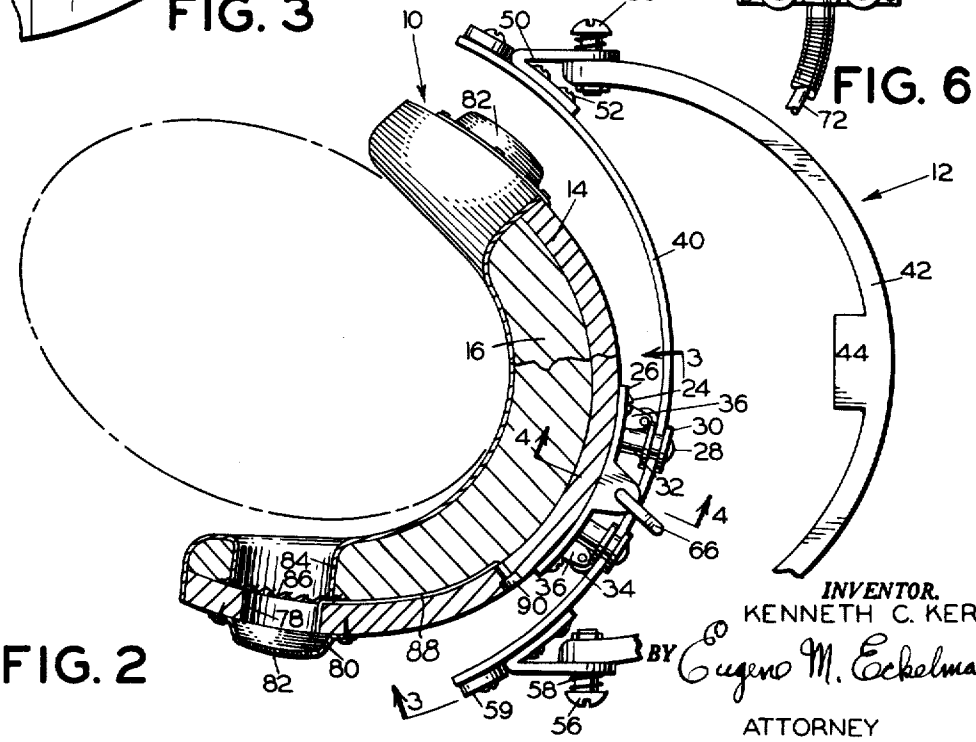


FIG. 2

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HEAD REST

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6 Claims. (Cl. 297—408)

This invention relates to new and novel improvements in head rests and is exemplified herein for use as a dental chair head rest, although it is to be understood that the device may serve as well for other applications.

The principal object of the present invention is to provide a head rest of improved contour, and more particularly one which has a transverse curvature for firmly supporting the head and neck, which has side openings for receiving the ears, and which has lower, side projections capable of providing a firm support for a person's jaw.

Another important object of the present invention is to provide a head rest having novel support means therefor wherein the head rest is adjustably pivotal on a horizontal axis and furthermore is movable on a laterally disposed arcuate track for positioning a person's head in straight forward or turned positions.

It is a further object of the present invention to provide a head rest pivotally supported on a horizontal axis and the axis is disposed in a plane substantially horizontal with the neck pivot of a person supporting his head in the rest.

It is a further object to provide an improved track structure for a head rest allowing the head rest to be moved on the track to various turned positions.

It is still another object to provide a head rest having novel means for turning the same from side to side and incorporating structure facilitating a power drive therefor.

Still another object is to proivde a laterally movable head rest having means for locking the head rest in desired positions of lateral adjustment.

Yet another object is to proivde a head rest which by a novel construction facilitates the application of speaker means therein for entertaining the person using it.

Briefly stated, the present device employs a head rest member, bracket support means, and means interconnecting the head rest member and the bracket support means whereby the head rest member is pivotal on a horizontal axis and also is turnable from side to side. The head rest member has a design providing for positive support for the head as well as the neck, it has a side contour forming ear openings, and it has lower, side projections which are adapted for engagement by the jaw. The device also employs locking means for positioning the head rest in a selected turned position and also has means facilitating power drive for moving said head rest in its laterally turning movement.

The invention will be better understood and the manner in which the foregoing and other objects of this invention are accomplished will be apparent from the accompanying specification and claims considered together with the drawings, wherein:

FIGURE 1 is a side elevational view of the present head rest and showing in phantom lines a person's head supported therein;

FIGURE 2 is an enlarged sectional view looking downwardly, taken on the line 2—2 of FIGURE 1;

FIGURE 3 is a fragmentary rear elevational view of supporting and track means for the head rest, taken on the line 3—3 of FIGURE 2 and showing the track means laid out in a flat condition;

FIGURE 4 is a sectional view taken on the line 4—4 of FIGURE 2 and showing in particular locking means for anchoring the head rest in selected turned positions of the head;

FIGURE 5 is a sectional view taken on the line 5—5 of FIGURE 4; and

FIGURE 6 is a fragmentary elevational view of head rest supporting structure incorporating power drive means therein.

Referring now in particular to the drawings, the present invention employs a head rest **10** which, as apparent in FIGURE 2, is laterally arcuate for receiving comfortably the back side of a person's head. This member is constructed of a suitably contoured rear frame element **14** and front padding or cushioning **16** and is suitably upholstered to present a pleasing appearance.

As apparent in FIGURE 1, the upright dimension of the head rest member is such as to support the back of the head as well as the neck of a person. The terminal forwardly directed edges of the head rest are curved at **18**, FIGURE 1, so as to be disposed behind the person's ear whereby the ear does not engage head rest structure. The curvatures **18** lead into lower, forwardly directed projections **20** which are sufficiently elongated to provide lateral support throughout a substantial length of the jaw.

Securely fixed to the frame member **14** of the head rest, as by screws **24**, is an arcuate roller mounting base **26**. Secured to the base **26** are upper and lower pins **28** on which are mounted flanged support rollers **30**. Bushings **32** are carried on the pins **28** intermediate the rollers **30** and the base **26** for positioning said rollers in selective spaced position from the base. As best apparent in FIGURE 3 there are a pair of upper rollers and a pair of lower rollers.

Also supported on the base **26** is a pair of vertically disposed backing rollers **34**, these rollers being mounted between suitable ears **36** secured to the base.

Flanged rollers **30** engage an arcuate track **40** for supporting the head rest thereon, the track being engaged within the flanged portion of the rollers and the rollers **34** engaging the back surface of the track. Thus it is apparent that the head rest member is movable on the track and capable of positioning the head rest straight forward or in various laterally turned positions to each side thereof, the rollers **30** supporting the head rest on the track and providing turning movement thereof on the track, and the rollers **34** bearing the backward leaning weight of the person's head.

Track **40** is supported by an arcuate frame member **42** having a standard **44** adapted for connection to a chair frame. In the case of dental chairs, clamp means **46** are provided on the chair and engageable with the standard **44** to accommodate vertical adjustment of the latter.

Securement of the track **40** to the arcuate frame member **42** is accomplished through the intermediary of V-shaped brackets **50** having one leg thereof secured to the track **40**, as by means of screws **52** disposed through slots **54** in the bracket and threaded in tapped bores in the track **40**. The slots **54** are elongated to provide for suitable positioning in mounting, and the screws **52** are of minimum length so as not to extend through the track **40** whereby rollers **34** have free rolling engagement on the track in the plane of the screws.

The other legs of the V-shaped brackets **50** are attached to the frame member **42** by means of screws **56**. More particularly, the screws **56**, in a preferred arrangement, pass freely through apertures in brackets **50** and are threaded in tapped bores in the frame member **42** to pivotally support the brackets **50**. Disposed between the head of screws **56** and brackets **50** are spring means such as coil springs **58** and upon tightening the screws a selected amount to compress the springs the head rest is anchored rather firmly but yet capable of pivotal adjustment on said screws.

Brackets **50** are narrower than the track **40**, FIGURE 3, so that the flanged rollers **30** are movable into the

plane thereof. Thus, these rollers may move along the track **40** to substantially the ends thereof if necessary. Resilient stops **59** are mounted at the ends of track **40** for abutment by rollers **30**, these stops being sufficiently wide to be engaged by said rollers.

It will be apparent that the present head rest is pivotal on a horizontal axis, i.e. on the screws **56**, and also is movable on the track **40** to provide straight forward positioning thereof as well as laterally turned positions. Thus when the head rest is used on a dental chair the dentist can achieve any head position of the patient desired. When it is desired that the jaw be supported firmly as when extracting a tooth, the head is turned in the head rest whereby to bring the jaw into abutment with the jaw supports **20**. The back of the head, the neck, and the jaw are securely supported so that the dentist need not be concerned with causing injuries to a patient from lack of jaw support.

For the purpose of locking the head rest against movement on the track **40**, a friction locking roller **60**, shown in detail in FIGURES 4 and 5, is mounted on a bent or curved shaft **62** rotatably supported in vertically spaced ears **64** secured suitably to base **26**. Shaft **62** has an integral turning handle **66** at its upper end. Roller **60** is disposed intermediate the base **26** and the track **40** and is positioned and dimensioned such that when rotated to a position wherein the bent portion of the shaft is directed toward the track the roller securely engages the track to lock the head rest in a stationary position. When the locking roller is rotated to a position with the bent portion of the shaft parallel to the track or toward the head rest the roller is disengaged from the track **40** and the head rest is movable freely on the track.

It is also within the purview of the present invention to provide power drive means for moving the head rest relative to the track. For this purpose, and with reference to FIGURE 6, a drive friction roller **70** is integrally secured to a flexible shaft **72** journaled in ears **74** secured to base **26**. Flexible shaft **72** leads to suitable power means such as an electric motor and the friction roller **70** is mounted so as to be in firm abutting relation with strap **40**. Thus upon powered rotation of such friction roller the head rest is driven along the track **40**.

The present invention also employs sound speakers in the head rest. For this purpose, head rest frame **14** has apertures **78** preferably in the jaw supports **20**, and mounted over these apertures on the outer surface of frame **14** are speakers **80**. Outer caps **82** are provided to protect the speakers.

Padding **16** has an opening **84** for the direct transmission of sound from the speaker to the inner area of the curved head rest, and any upholstery material which covers the head rest is suitably apertured adjacent the inner end of the opening **84** or turned in to define the opening in the padding as shown in FIGURE 2. Also, a protective mesh material **86** is provided over the inner end of openings **78** to protect the speakers **80** on the inner side of the head rest.

Lead wires **88** from the speakers are directed along the inner surface of the frame **14** to a plug-in assembly **90** whereby a convenient attachment to amplifier and sound apparatus, not shown, is achieved.

Thus, music may be broadcast to a person using the head rest. In the case of a dental chair head rest, the patient through the medium of music, instructive programs, or other types of entertainment is caused to relax. This reduces the anxiety usually existing in dental patients and obviously improves working conditions for the dentist. Such sound apparatus may also be employed for accomplishing hypnosis.

The particular structure of the head rest as incorporating the speaker means in the jaw support facilitates entertainment of the user without covering the ears. The user's head is free for movement in the rest and since his ears are not covered, communication with the person using the rest can readily be accomplished. Also, the use of two speakers, one on each side of the head facilitates the application of stereophonic sound to the head rest.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A head rest comprising a laterally arcuate portion for supporting the back of a person's head and having terminal forwardly directed edges, at least one of the terminal edges having a projecting portion leading forwardly at a point adjacent the lower end thereof to project in an area below and forwardly of the ear of a person whose head is supported in the head rest, thereby forming a lateral jaw support.

2. The head rest of claim 1 including rearwardly recessed portions in the said terminal edges above the jaw supports to form ear openings.

3. The head rest of claim 1 wherein a jaw support is provided on each side of the head rest and said jaw supports comprise a fixed and integral extension of the head rest, said head rest including support means therefor, and means connecting said head rest to said support means for rotatable adjustment on a horizontal axis.

4. The head rest of claim 3 including means connecting said head rest to said support means for lateral movement on an arcuate path to vary the forward facing direction of the head rest.

5. A head rest comprising a laterally arcuate portion for supporting the back of a person's head and having terminal forwardly directed edges, at least one of the terminal edges having a projecting portion leading forwardly at a point adjacent the lower end thereof to project in an area below and forwardly of the ear of a person whose head is supported in the head rest, thereby forming a lateral jaw support, said head rest including support means therefor, an arcuate track pivotally connected to said support means on a horizontal axis, roller means on said head rest rotatable on a horizontal axis and engaged with said track to support the head rest on the track for adjusting movement to vary the forward facing direction of the head rest, and releasable lock means between said head rest and said track for releasably locking said head rest.

6. A head rest comprising a laterally arcuate portion for supporting the back of a person's head and having terminal forwardly directed edges, at least one of the terminal edges having a projecting portion leading forwardly at a point adjacent the lower end thereof to project in an area below and forwardly of the ear of a person whose head is supported in the head rest, thereby forming a lateral jaw support, said head rest including support means therefor, an arcuate track pivotally connected to said support means on a horizontal axis, first roller means on said head rest rotatable on a horizontal axis and engaged with said track to support the head rest on the track for adjusting movement to vary the forward facing direction of the head rest, second roller means rotatable on a vertical axis and interengaged between said head rest and said track to bear rearward forces imparted on said head rest and thereby provide substantially a friction free adjusting movement of said head rest on said track, and releasable lock means between said head rest and said track for releasably locking said head rest.

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