Jan. 25, 1966 C. L. REDFIELD 3,231,308

ADJUSTABLE HEADREST FOR BARBER CHAIRS

Filed Dec. 4, 1963 2 Sheets-Sheet 1

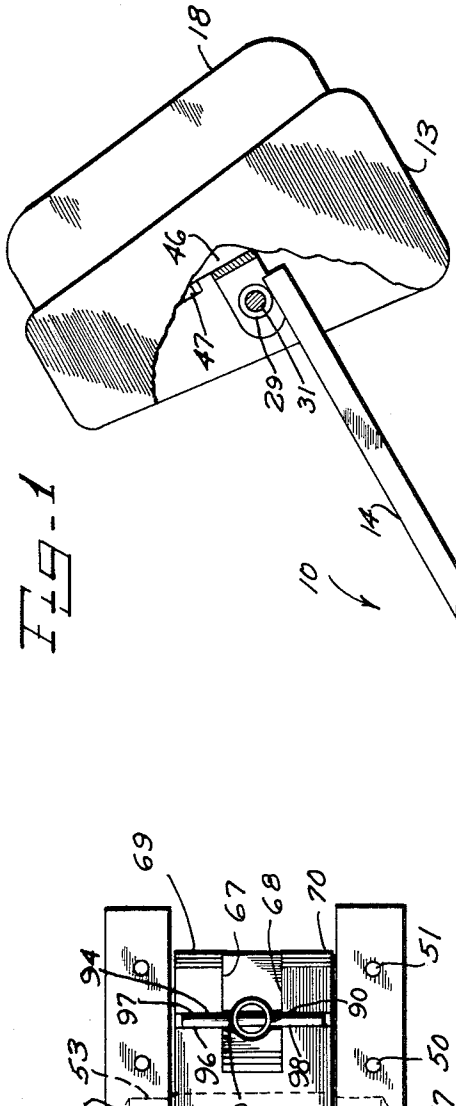


FIG. 1

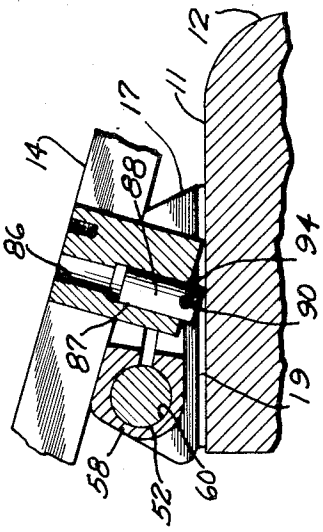


FIG. 4

FIG. 3

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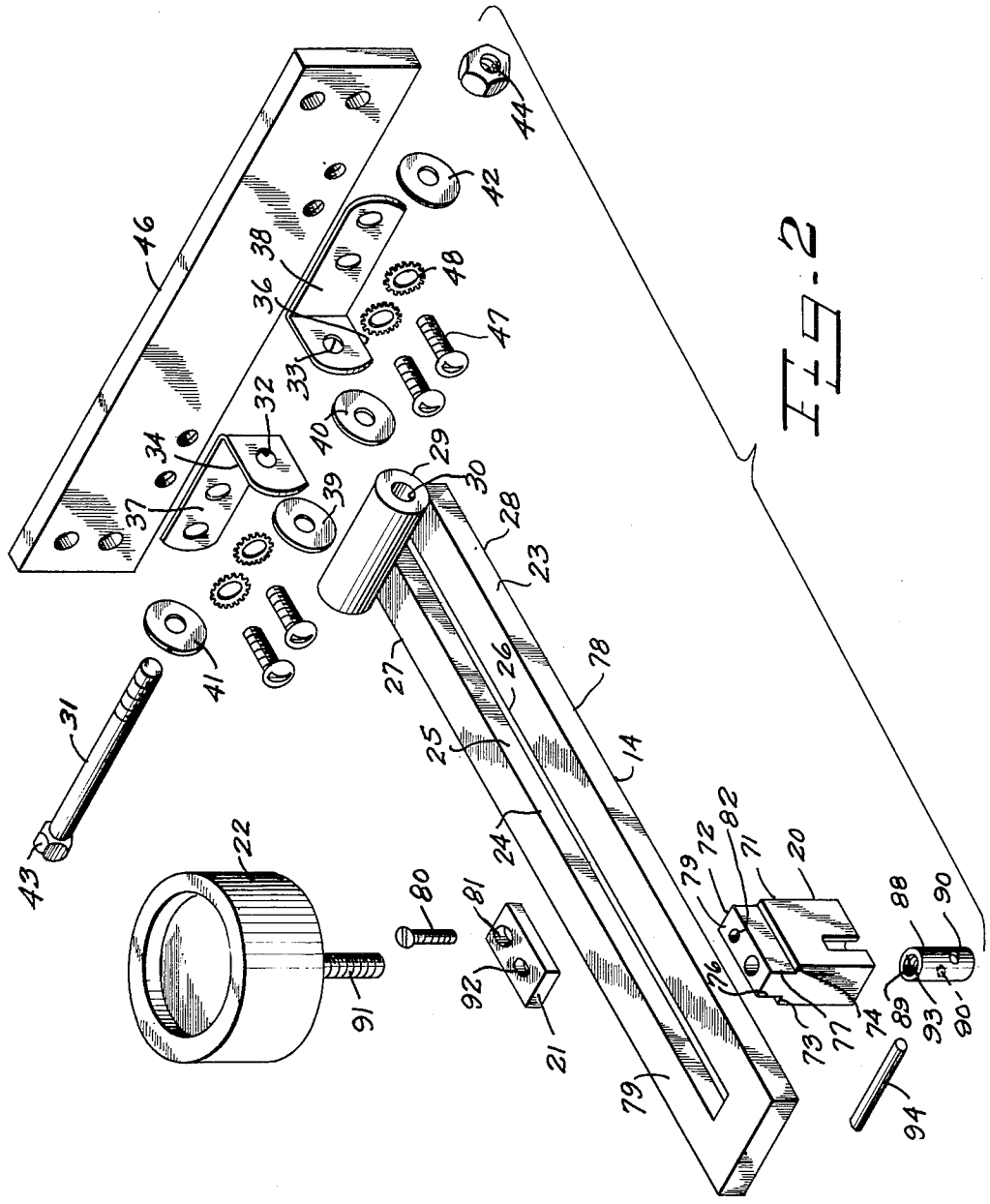


FIG. 2

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ADJUSTABLE HEADREST FOR BARBER CHAIRS

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11 Claims. (Cl. 297—410)

The present invention relates to improvements in headrests and particularly to an improved chair headrest assembly of the type used in barber chairs.

In chair headrest assemblies of the type used in barber chairs a padded headrest is supported on the chair back for providing a support for the chair occupant especially when the chair is in the reclining position. In order to provide a comfortable and relaxing support for the occupant, particularly in the neck region and in the lower region of the back of the head, the headrest should be adjustable so that optimum positioning can be provided over a wide range of sizes of occupants.

It is, therefore, an object of the present invention to provide an improved chair headrest capable of being adjustably positioned to accommodate a wide range of sizes of chair occupants.

Another object of the present invention is to provide a chair headrest assembly wherein the headrest is pivotally mounted on a support member which is, in turn, pivotally and extensively mounted on the chair back for providing vertical, horizontal and angular positioning of the headrest relative to the chair back.

Another object of the present invention involves the provision of a single adjustable locking device for locking the headrest in suitable positions both vertically and horizontally relative to the chair back.

Yet another object of the present invention is to provide a headrest attachment assembly for attaching the headrest to the back of the chair in which the attachment assembly provides for both vertical and horizontal adjustable positioning of the headrest relative to the chair, is easily and quickly adjusted, requires only one adjustment mechanism, is simple in design and construction, can be easily installed on the chair back and requires little or no maintenance.

Many other features, advantages and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description which follows and the accompanying sheets of drawings, in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

In the drawings:

FIGURE 1 is a side elevational view of a headrest assembly constructed in accordance with the principles of the present invention and mounted on the back of a chair with a portion of an end wall of the headrest cut away for purposes of clarity;

FIGURE 2 is an exploded isometric view of portions of the assembly of FIGURE 1;

FIGURE 3 is a bottom plan view of an attachment assembly utilized in attaching the headrest assembly to the chair back; and

FIGURE 4 is a sectional view of the assembly of FIGURE 3 in its attached position on the chair back.

As shown on the drawings:

Referring to FIGURE 1, a headrest assembly constructed in accordance with the principles of the present invention is indicated generally at **10** attached to a top surface **11** of a back **12** of a chair such as a barber chair, a dentist chair, or the like. The headrest assembly **10** is particularly characterized as comprising a headrest **13** pivotally mounted at one end of a headrest slat or support member **14** which is pivotally and extensibly mounted on a slat or support member attachment assembly indicated generally at **16** secured to the top surface **11** of the chair back **12** by means of a clamp assembly as at **17**. In operation, the headrest **13** is adjustably positioned by means hereinafter described such that a padded portion **18** of the headrest **13** engages the neck region and the lower region of the back of the head of the chair occupant for providing comfort and support to the occupant. As will become apparent hereinafter, the present invention provides for optimum positioning of the headrest **13** and the padded portion **18** thereof to accommodate a wide range of occupant sizes particularly with respect to the length of the torso or trunk portion of the occupant.

The attachment assembly **16** comprises generally a headrest clamp **19** mounted for pivotal movement on the clamp assembly **17** and which slidably carries along one surface thereof the slat or support member **14**. A headrest key or bracket **20** coacts with a key cover **21** and a headrest knob assembly **22** for maintaining the support member **14** and the headrest clamp **19** in connected and adjustably movable assembly.

Referring to FIGURES 1 and 2, the slat or support member **14** on which the headrest **13** is pivotally mounted comprises an elongated generally rectangularly shaped straight body member **23** having an axially extending interstice or groove **25** formed therein and defined by interfacing inner walls **24** and **26** and separating a pair of bifurcate finger members **27** and **28**.

At one end of the support member **14** an enlarged tubularly shaped elongated slat head **29** is fixedly secured thereto by any suitable means, for example, by means of a weld or the like and extends essentially transversely to the longitudinal axis of the support member **14**. An axially extending cylindrical shaped aperture **30** is formed centrally in the slat head **29** for rotatably journalling a bolt member **31**. The bolt **31**, in its assembled position, also extends through apertures **32** and **33** formed respectively in end portions **34** and **36** of a pair of trunnions **37** and **38**. In assembled position, the end portions **34** and **36** of the trunnions **37** and **38** overlie opposite ends of the slat head **29** such that apertures **32** and **33** thereof are in registry with aperture **30**. In addition, the end portions **34** and **36** are separated respectively from the slat head **29** by means of washer members **39** and **40**. Washers **41** and **42** are mounted at opposite ends of the bolt **31** for separating respectively the end portion **34** from a head **43** of the bolt and for separating end portion **36** from a nut **44** which is threaded on the bolt **31** for maintaining the slat head, washer members **39** and **40**, trunnions **37** and **38** and washers **41** and **42** in connected assembly.

The trunnions **37** and **38** are fixedly connected to a headrest crossbar **46** by means of a plurality of suitable fastening means, for example, threaded screws and lock washers **47** and **48** respectively. As best seen in FIGURE 1, cross bar **46** is in turn fixedly secured to the headrest **13** by suitable means such as a plurality of bolts **47**.

Referring to FIGURES 1, 3 and 4, the clamp assembly **17** comprises a pair of clamp supports **48** and **49** adapted to be mounted in aligned spaced relation on the top surface **11** of the chair back **12** by suitable fastening means, such as a plurality of screws (not shown) extending through apertures **50** and **51**. A cylindrically shaped clamp shaft **52** having reduced diameter stub portions **53** and **54** at opposite ends thereof is mounted in clamp supports **48** and **49**. The shaft **52** is nonrotatably fixedly secured to clamp supports **48** and **49** by means of a pair of lock pins (not shown) inserted into aligned apertures formed respectively in the clamp sup-

ports 48 and 49 and the stub portions 53 and 54 as indicated at reference numerals 56 and 57.

One aspect of the present invention resides in the provision and necessity of only a single locking mechanism for adjustably positioning both pivotally and extensibly the support member 14, and to this end the headrest clamp 19 is particularly characterized as comprising an axially elongated generally U-shaped member having a closed end or bight portion 58 and an open end portion as at 59. The bight portion 58 is cylindrically apertured complementarily to the shaft 52 as at 60. In addition, the clamp 19 is split axially by means of an interstice or groove 61 defined by a pair of parallel spaced interfacing inner surfaces 62 and 63 to form a pair of bifurcate finger members as at 64 and 66 extending radially outwardly from the aperture 60. It will be appreciated that the groove 61 is in open communication with the aperture 60 to provide for a degree of resiliency of the finger members such that a force acting on the finger members to press such members together will act to reduce the width of the groove 61 and likewise the diameter of the aperture 60, thereby providing a pressed state configuration of the clamp 19. A release of such force will cause the finger members 64 and 66 to resiliently separate to their nonpressed or free state configuration.

Aperture 60 is dimensioned such that when the clamp 19 is on its free state configuration, that is, when there is no force being applied to finger members 64 and 66 to urge them together, the clamp 19 can be pivoted or rotated about the shaft 52. However, when sufficient force is exerted on the finger members the diameter of aperture 60 will be reduced sufficiently such that the bight portion 58 of the clamp 19 will snuggly engage the shaft 52 to prevent rotation of the clamp 19 thereon.

It will be noted in FIGURE 3 the clamp 19 is also radially split by a pair of transversely extending interfacing walls 67 and 68 to form a pair of projections 69 and 70 in the open end 59 thereof. Situated between walls 67 and 68 and extending substantially perpendicularly to finger members 64 and 66 the headrest key or bracket 20 comprises, as can best be seen in FIGURE 2, a generally rectangularly shaped body portion 71 having an extension portion 72 projecting from one end thereof to define a pair of shoulder surfaces as at 73 and 74. Parallel side walls 76 and 77 of the extension 72 are spaced to project into and be received by the groove defined by inner walls 24 and 26 of the support member 14. In its assembled position, the key 20 is moved upwardly as viewed in FIGURE 2 such that shoulder surfaces 73 and 74 abuttingly engage a bottom surface 78 of the support member 23 adjacent the inner walls 24 and 26 thereof, and the side walls 76 and 77 are dimensioned such that a top surface 79 of the key 20 is situated coplanar with a top surface 79 of the support member 14.

The key cover 21 has a width substantially equal to the width of the body portions 71 of the key 20 and is dimensioned to straddle the groove 25 of the support member 14 similarly to the shoulder surfaces 73 and 74 of the key 20. In its assembled position, the key cover 21 and the key 20 are maintained in connected but slidable assembly on the support member 14 by suitable fastening means such as a threaded screw 80 adapted to extend through an aperture 81 formed in the key cover 21 through the groove 25 and into a complementarily threaded aperture 82 formed in the top surface 79 of the key 20. The screw 80 is not tightened completely into the aperture 82 but instead is backed off silghtly to permit the key 20 and the key cover 21 to slide axially along the groove 25 of the support member 14.

Referring again to FIGURE 1, it will be noted the finger members 64 and 66 comprise straight flat outside surfaces as at 83 and 84 and the bottom surface 78 of the support member 14 is supported on the outer surface 83 of the finger member 64. In order to adjustably position the support member 14 on the finger member 64 as well as to angularly position the clamp 19 on the shaft 52, the key 20 is provided with a cylindrically shaped aperture 86 extending substantially transversely to the support member 14 and comprises an enlarged portion 87 adapted to slidingly receive a complementarily shaped knob stud 88 axially centrally apertured as at 89 and radially apertured as at 90, 90. The knob 22 comprises an elongated threaded stud 91 adapted to extend, in its assembled position, through an aperture 92 formed in the key cover 21, through the groove 25 of the support member 14 and into the aperture 86 of the key 20 to be received in a complementarily threaded portion 93 of the aperture 89 of the knob stud 88. An elongated cylindrically shaped roll pin 94 extends, in its assembled position, through the radially aligned apertures 90 of the knob stud 88.

Referring particularly to FIGURE 3, it will be noted that the outer or bottom surface 84 of the clamp 19 is grooved as at 96 on a line parallel to the axis of the shaft 52 for receiving end portions 97 and 98 of the roll pin 94.

It will be appreciated that when the attachment assembly 16 is assembled, the threaded stud 91 of the knob 22 is adjusted such that the knob stud 88, or more particularly the apertures 90, 90 thereof, are situated outwardly of or below the outer surface 84 of the finger member 66 of the clamp 19. The roll pin 94 is then inserted in the groove 96 through apertures 90, 90 and then the stud 91 of the knob 22 is threaded into the knob stud 88, which is held nonrotatable by means of the roll pin 94, such that the roll pin is forced into tight engagement with the finger member 66, thereby tending to squeeze the finger members together and also to urge the outer surface 83 of the finger member 64 into tight engagement with the lower surface 78 of the support member 14. It will be appreciated that the force exerted by the roll pin 94, as it squeezes the finger members together, will tend to reduce the diameter of aperture 60 of the clamp 19 to snugly engage the shaft 52 and will cause the clamp 19 to be nonrotatable on the shaft 52, and also forces the engaging surfaces of the clamp 19 and the support member 14 into tight pressing relation, resulting in relatively fixed assembly of the clamp assembly 17, the clamp 19, the support member 14 and the key 20.

In operation, the knob 22 can be loosened sufficiently to provide both pivotal and extensible movement of the support member 14 for positioning the padded portion 18 of the headrest 13 properly to accommodate the occupant of the chair. After the headrest 13 has been properly positioned, tightening of the knob 22 precludes both pivotal and extensible movement of the support member 14, and it will be appreciated that the headrest 13 may continue to pivot about the head 29 of the support member 14 to provide for minor movement of the occupant of the chair.

Accordingly, there has been provided a headrest assemble for a chair adapted to be adjustably positionable to accommodate and comfortably support a wide variety of chair occupants. In addition, locking of the horizontal, vertical and angular position of the headrest assembly relative to the chair is accomplished by actuating merely a single locking device. The headrest assembly of the present invention is simple in design, inexpensive in manufacture and assembly and reliable in operation.

Although minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such modifications as reasonably come within the scope of my contribution to the art.

I claim as my invention:

1. A headrest assembly for a chair comprising,
a headrest,
an elongated support member,
means connecting one portion of said support member to said headrest for providing pivotal movement therebetween, and
a support member attachment assembly for attaching another portion of said support member to the chair including
means providing pivotal movement of said support member relative to said chair, and
means for selectively positioning said support member in both linear, horizontal and vertical directions relative to said chair, said last named means also locking said support member to prevent movement thereof relative to said chair.

2. A headrest assembly for the back of a chair comprising,
a headrest, and
mounting means connected to said headrest and connectable with said chair for mounting said headrest on the back of the chair, said mounting means comprising,
means for providing pivotal movement of said headrest relative to the chair back for angularly positioning said headrest relative to the back, and means for adjustably spacing said headrest in both a horizontal and a vertical direction relative to said chair back and at any predetermined angular position of said headrest.

3. A headrest assembly for the back of a chair comprising,
a headrest support member,
a headrest connected to one portion of said support member, and
mounting means connected to said support member and connectable with the chair back for mounting said support member on the chair back, said mounting means comprising,
means for providing pivotal movement of said support member relative to the chair back for angularly positioning said support member relative to the chair back, and
means for adjustably spacing said one portion of said support member from the chair back in both a horizontal and a vertical direction and at any predetermined angular position of said support member,
said last named means also adapted to selectively lock said one portion of said support member immovable in angular and spatial postion relative to said chair back.

4. A headrest assembly for mounting on the back of a chair comprising,
a headrest clamp,
a headrest support member slidably carried on said clamp,
a headrest mounted on said support member,
a pivotal mounting member connectable to the back of said chair and pivotally mounting said clamp for pivotal movement about an axis extending parallel to the front and rear surfaces of the chair back, and
means for tightly pressing said clamp against said support member to render said support member immovable relative to said clamp to position said headrest.

5. A headrest assembly for mounting on the back of a chair comprising,
a headrest clamp,
a headrest support member slidably carried on said clamp,
a headrest mounted on said support member,
a pivotal mounting member connectable to the back of said chair and pivotally mounting said clamp for

pivotal movement about an axis extending parallel to the front and rear surfaces of the chair back, and
means for tightly pressing said clamp against said mounting member to render said mounting member immovble relative to said clamp to position said headrest.

6. A headrest assembly for mounting on the back of a chair comprising,
a headrest clamp,
a headrest support member slidably carried on said clamp,
a headrest mounted on said support member,
a pivotal mounting member connectable to the back of said chair and pivotally mounting said clamp for pivotal movement about an axis extending parallel to the front and rear surfaces of the chair back, and
means for tightly pressing said clamp against said support member and said mounting member to render said members immovable relative to said clamp to position said headrest.

7. A headrest assembly for mounting on the back of a chair comprising,
a clamp assembly adapted to be connected to the back of the chair and having a cylindrical clamp shaft immovably mounted thereon and extending parallel to the front and rear surfaces of the chair back,
an axially split headrest clamp pivotally mounted on said shaft,
a support member carried on said clamp,
a headrest mounted on said support member, and
means for tightly squeezing said clamp on said shaft to render said clamp immovable relative to said clamp assembly for positioning said headrest.

8. A headrest assembly for mounting on the back of a chair comprising,
a clamp assembly adapted to be connected to the back of the chair and having a cylindrical clamp shaft immovably mounted thereon and extending parallel to the front and rear surfaces of the chair back, a headrest clamp mounted for pivotal movement on said shaft,
a support member slidably carried for translatory movement on said clamp in a plane transverse to the front and rear surfaces of the chair back,
a headrest mounted on one portion of said support member and
means for tightly squeezing and pressing said clamp against said shaft and said support member to render said clamp and said support member immovable relative to said clamp assembly for positioning said headrest.

9. A headrest assembly for a chair comprising,
a clamp assembly adapted to be mounted on a back of a chair and having a horizontal cylindrical shaft immovably mounted thereon,
a general U-shaped headrest clamp having a closed end portion and a pair of fingers extending from said closed end portion to an open end portion, said shaft extending loosely through the closed end portion of said clamp to provide pivotal movement of said clamp about said shaft,
a headrest support member slidably carried on one of said fingers of said clamp,
a headrest mounted on said support member, and
bracket means overlying the fingers of said clamp and said support member and being adjustably movable relative to said clamp and said support member to selectively squeeze the fingers around said shaft and said shaft support member against said one of said fingers to render said clamp assembly, said clamp and said support member relatively immovable to position said headrest.

10. A headrest assembly for a chair comprising,
a clamp assembly adapted to be mounted on a back of

the chair and having a cylindrical shaft immovably mounted thereon,

a generally U-shaped clamp having a closed end portion and an open end portion comprising a pair of resiliently movable spaced fingers having a free state configuration and a pressed state configuration, said shaft extending between said fingers near said closed end of said clamp and being dimensioned to fit loosely between said fingers when the fingers are in a free state configuration and to fit tightly and immovably between said fingers when said fingers are pressed together in a pressed state configuration,

a headrest support member having one portion slidably engageable with one finger of said clamp,

a headrest mounted on a second portion of said support member,

a bracket having one member overlying the other finger of said clamp and a second member overlying said one portion of said support member, said bracket members being movable toward one another, and means for interconnecting said bracket members for drawing said members tightly together to press said fingers into said pressed state configuration to render said clamp immovable relative to said shaft and to press said one portion of said support member into tight engagement with said one finger of said clamp to render said support member immovable relative to said clamp to immovably position said second portion of said support member.

11. A headrest assembly for a chair comprising,

a pair of clamp support members for mounting on a back of the chair,

a horizontal cylindrical clamp shaft immovably mounted on said clamp support members,

a generally U-shaped clamp having a closed bight portion and an open end bifurcate portion comprising

a pair of spaced resilient fingers, said fingers being radially aligned relative to said shaft and having interfacing inner surfaces and outer surfaces opposite said inner surfaces, said shaft extending between said fingers near said bight portion of said clamp and being dimensioned to fit loosely between said fingers

when the fingers are in a free state configuration and to fit tightly and immovably between said fingers when said fingers are pressed together in a pressed state configuration,

an elongated headrest support member slidably engageable with an outer surface of one of said fingers,

a bracket having one member overlying said support member opposite said one finger and a second member fixedly connected to said one member and having a major axis extending transversely to said shaft adjacent said fingers, means defining an aperture extending through said second members substantially parallel to said major axis,

a tubular knob stud having one end thereof slidably carried in said aperture and having a opposite end thereof extending outwardly of said aperture to overlie the outer surface of the other of said fingers, said stud having a threaded aperture formed therein extending from said one end thereof, and

a knob assembly having a knob overlying said one member of said bracket and a threaded bolt extending from said knob into the complementarily threaded aperture of said stud, whereby turning said knob assembly to thread the bolt thereof into said aperture of said stud will press said fingers together in a pressed state configuration to render said clamp immovable relative to said shaft and also will draw said headrest support member into tight engagement with said one finger to render said support member immovable relative to said clamp for selectively positioning said second portion of said support member.

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