ADJUSTABLE HEADREST ASSEMBLY

Inventor: Denis Viger, Magog (CA)

Correspondence Address:
GEORGE A. SEABY
SEABY & ASSOCIATES
250 CITY CENTRE AVNUE
OTTAWA, ON K1R6K7

Appl. No.: 11/812,764
Filed: Jun. 21, 2007

Related U.S. Application Data:
Provisional application No. 60/818,548, filed on Jul. 6, 2006.

Publication Classification
Int. Cl.
A47C 7/38
(2006.01)

U.S. Cl. ........................................ 297/408

ABSTRACT
A headrest assembly for a chair or sofa includes a fixed rear section, and a front section adapted to slide upwardly and forwardly to an inclined orientation with respect to the rear section. Movement of the front section is controlled by a linear actuator, which is connected via a switch to a source of power such as a battery.
ADJUSTABLE HEADREST ASSEMBLY

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims priority on U.S. Provisional Application 60/818,548 filed Jul. 6, 2006.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention
[0003] This invention relates to an adjustable headrest assembly.
[0004] While the headrest assembly was designed primarily for use on a chair or sofa, it will be appreciated that the assembly can be used in an automotive or other vehicle.
[0005] 2. Description of Related Art
[0007] It will be noted that most of the apparatus disclosed by the above listed patents are somewhat complicated and consequently expensive to manufacture.

BRIEF SUMMARY OF THE INVENTION

[0008] The present invention provides a relatively simple headrest assembly which includes a few, easily assembled elements.
[0009] Accordingly, the invention relates to a headrest assembly comprising a rear section for mounting in a fixed position on a chair or sofa; a front section pivotally and slidably mounted on said front section for movement between various inclined positions with respect to said rear section; and an actuator for moving said front section with respect to said rear section between the various inclined positions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The invention is described below with reference to the accompanying drawings, wherein:
[0011] FIG. 1 is a isometric view of a headrest assembly in accordance with the present invention in a first position;
[0012] FIG. 2 is an isometric view of the headrest assembly of FIG. 1 in a second position;
[0013] FIG. 3 is an isometric view of a rear section of the headrest assembly of FIGS. 1 and 2; and
[0014] FIG. 4 is a cross-sectional view of the headrest assembly of FIGS. 1 to 3.

DETAILED DESCRIPTION OF THE INVENTION

[0015] With reference to the drawings, the principal elements of the headrest assembly of the present invention include a rear section 1, a front section 2 and a linear actuator 3. The rear section 1 of the assembly includes a rectangular back plate 4 for mounting in a fixed position on a chair or sofa back (not shown). The rear section can be mounted on the rear of a padded headrest (not shown). It will be appreciated that the plate 4 could also define the back of a headrest. A pair of generally inverted L-shaped end plates 5 are integral with the back plate 4 and extend forwardly therefrom. Each end plate 5 includes upper and lower slots 7 and 8, respectively for slidably receiving pins 9 and 10, respectively. The upper slots 7 are inclined upwardly and outwardly, and the lower slots 8 are vertical. The pins 9 and 10 extend inwardly from the end walls 13 of the front section 2 of the headrest assembly. The end walls 13 are integral with a rectangular front wall 14. Thus, the front section 2 of the assembly is generally C-shaped when viewed from above or below, and the end walls 13 overlap the end plates 5 of the rear section 1. While they are not shown, it will be appreciated that padding and a cover would be added to the whole assembly or at least to the end walls 13 and the front wall 14 of the front section. Accordian pleats in the cover would permit movement of the front section relative to the rear section.

[0016] The linear actuator 3, which is a piece of off-the-shelf hardware, includes a direct current electric motor 16 connected through switches to a source of electrical power such as a battery (not shown). The switches can be mounted for manual operation in or on the arm of a chair or sofa. The motor 16 is connected to a spindle (not shown) in the housing 17 by a transmission 18. A coupling 20 on the bottom, transmission end of the housing is pivotally connected to the center of the bottom end of the rear section back plate 4 by a elevis 21. A reciprocating shaft 22 extending out of the top end of the housing 17 is pivotally connected to the center of the top end of the front wall 14 of the second section 2 by a elevis 23. A suitable linear actuator is available from Jaeger Industrial Co. Ltd., Taipei, Taiwan, R.O.C.

[0017] In operation, with the shaft 22 of the linear actuator 3 retracted (FIG. 3), the bottom wall 14 of the front section 2 defines a small acute angle with the back plate 4 of the rear section 1 (FIG. 1). When the shaft 22 of the linear actuator is extended, the pins 9 slide upwardly and outwardly in the slots 7 and the pins 10 side upwardly in slots 8 so that the front wall 14 defines a larger acute angle with respect to the plate 4, i.e. the front section 2 becomes more inclined with respect to the rear section 1. Thus, by connecting the linear actuator 3 to a forward and reverse switch (not shown), which is in turn connected to a source of electrical power, the inclination or tilt of the front section of the headrest assembly can be changed.

1. A headrest assembly comprising a rear section for mounting in a fixed position on a chair or sofa; a front section pivotally and slidably mounted on said front section for movement between various inclined positions with respect to said rear section; and an actuator for moving said front section with respect to said rear section between the various inclined positions.

2. The headrest assembly of claim 1, wherein said rear section includes a back plate for mounting on the chair or sofa, and a pair of rear end plates extending forwardly from said back plate; and said front plate includes a front wall and a pair of front end walls extending rearwardly from said front wall into overlapping relationship with said rear end plates.
3. The headrest assembly of claim 2, wherein said rear and front sections are generally C-shaped when viewed from above or below.

4. The headrest assembly of claim 2, wherein said rear end plates have an inverted L-shaped configuration.

5. The headrest assembly of claim 4 including a vertical slot in a vertical arm of each said rear end plate, an inclined slot in an upper, forwardly inclined arm of each said rear end plate; and a pair of pins extending inwardly from each said end wall of the front section through said slots, whereby the front section can slide vertically while tilting outwardly with respect to said rear section of the assembly.

6. The headrest assembly of claim 5, wherein said linear actuator includes a housing having first and second ends, the first end being pivotally connected to a bottom end of said back plate of the rear section; and a reciprocating shaft extending out of the second end of the housing, the shaft having a free end pivotally connected to a top end of said front wall of the front section, movement of said shaft in said housing causing tilting of the front section with respect to said rear section.

7. The headrest assembly of claim 6, wherein the linear actuator extends between the bottom center of the rear plate and the top center of the front wall.

* * * * *