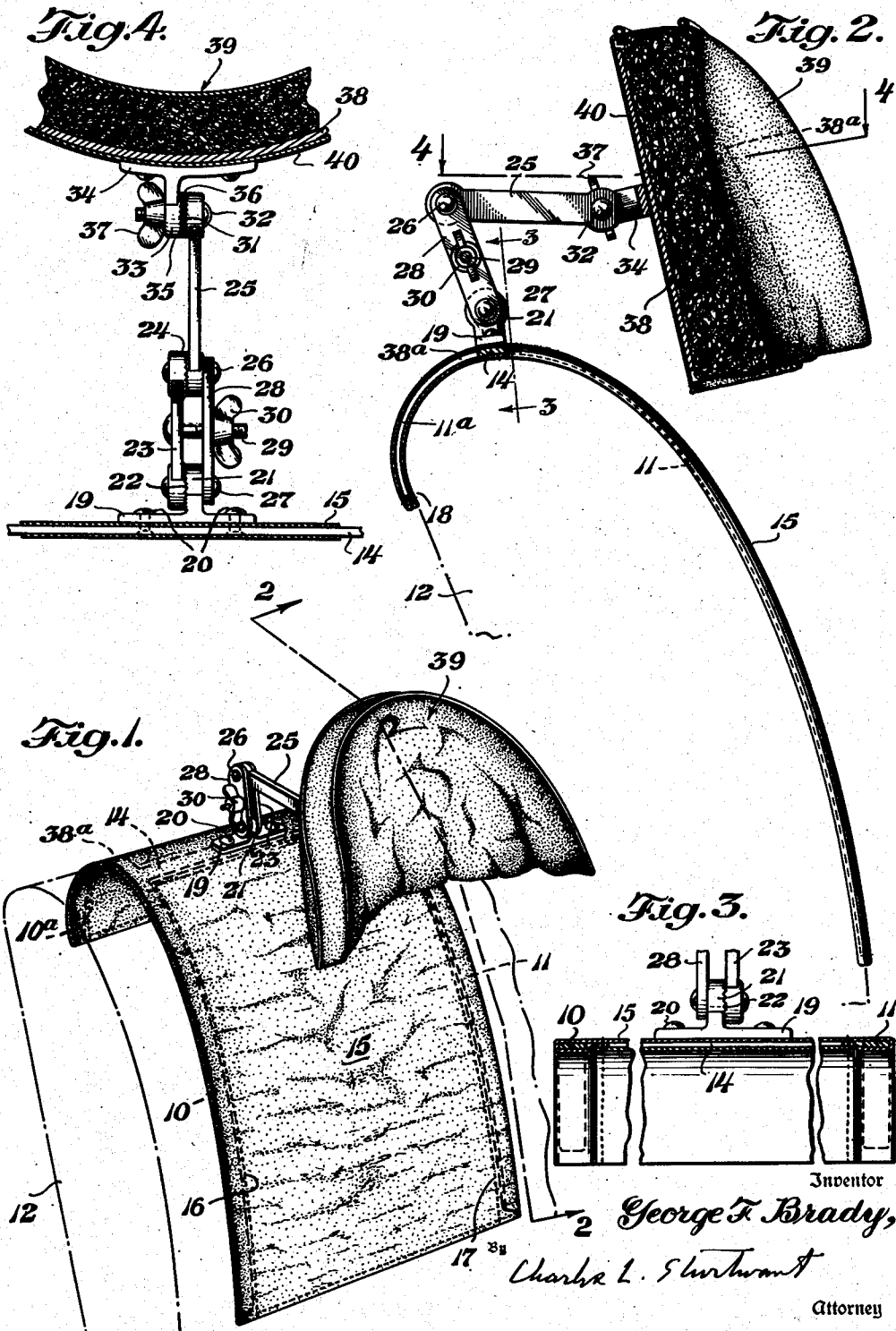


March 24, 1953

G. F. BRADY  
HEAD AND NECK SUPPORT  
Filed Dec. 4, 1946

2,632,497



## UNITED STATES PATENT OFFICE

2,632,497

## HEAD AND NECK SUPPORT

George F. Brady, Williamsport, Pa.

Application December 4, 1946, Serial No. 713,863

3 Claims. (Cl. 155—174)

1

The present invention relates to new and useful improvements in supports for a part of the body of a user, and more particularly to such improvements in a support or rest for the head and neck of persons in a seated or reclined position.

In general, the invention contemplates the provision of means providing a combined head and neck support which is adapted to be readily fitted on the back of a seat or other article of furniture serving as a support for the occupant. More specifically, the invention is concerned with supporting the head and neck of occupants of moving vehicles, such as automobiles, aircraft, railroad trains and the like. In such and other vehicles, the muscles and nerves associated with the head and neck of the occupant are subjected to constant and varied stresses resulting from the varied movements of the particular vehicle, such as vibration, bouncing, banking or turning, sudden acceleration and retardation, or the like. In aircraft, and particularly military aircraft, the pilot and any other occupant is subjected during maneuvering to violent and greatly magnified stresses both laterally and longitudinally.

With the above in mind, one of the principal objects of the present invention is to provide an improved head and neck support which will substantially eliminate or reduce to a minimum stresses and the resultant fatigue to which occupants of such vehicles are subjected.

Another object of the present invention is to provide a cushioned support adapted to snugly accommodate not only the head but also the neck of the occupant immediately adjacent the shoulder line whereby to provide maximum protection and comfort.

A further object of the invention is to provide a curved support of the above type which extends around the back of the head and neck and forwardly so as to reduce and cushion lateral movements of the head which normally result from swaying, turning or transverse movements of the moving vehicle.

A still further object of the invention is to provide a support of the above type having an improved mounting arrangement including means engaged by the body of the occupant when seated and pressed against the back of the seat for maintaining the support in proper position.

A still further object of the invention is to provide a support of the above type wherein the head and neck supporting portion is adapted to be adjusted relative to the mounting and seat in order to accommodate occupants of different statures in any desired position.

2

The invention still further aims to provide a support assembly substantially of the above type which is relatively simple in design and construction, which is easily positioned, removed and adjusted, and which is thoroughly reliable and efficient in operation and use.

The above and other objects of the invention will in part be obvious and will be hereinafter more fully pointed out.

In the accompanying drawing:

Figure 1 is a perspective view showing the supporting assembly in position on a seat or the like;

Figure 2 is a longitudinal sectional view showing the head and neck support and the mounting therefor;

Figure 3 is a sectional view, taken substantially along the line 3—3 of Figure 2; and

Figure 4 is an enlarged detail view showing the adjustable supporting bracket for the head and neck rest.

Referring more in detail to the accompanying drawing, the mounting for the combined head and neck support includes a pair of strap members 10, 11 which may be of metal or other suitable material having some slight flexibility. The strap members are each shaped to lie in intimate contact with the front surface of the back of a seat 12 and the ends 10a, 11a of the strap members are rather sharply curved to fit over the top of the seat and to snugly engage the top and the rear surface of the back of the seat, as shown in Figure 1. The slight flexibility of the strap members will increase the gripping action of the mounting on the back of the seat. The strap members are joined by a brace in the form of a cross member 14 which may be welded or otherwise suitably secured thereto. The cross member 14 is positioned so that it will be disposed along or immediately adjacent the top portion of the back of the seat.

A covering or apron 15 overlies the strap members 10, 11 and the brace 14 and is preferably stitched along the sides thereof, as at 16, 17, to provide hems enclosing the strap members 10, 11, respectively. The ends of the apron may be stitched, as at 18, or otherwise secured together if desired. The apron may be formed of leather, fabric, plastic or other suitable material which may be laminated. Preferably, the material is of a type which presents a smooth outer surface for contact with the back of the occupant and an inner rough or unfinished surface which affords an area of frictional contact with the surface of the back of the seat in order to assist in maintaining the assembly against movement and in

proper position. It will be seen that the weight of the occupant in leaning against the back of the seat will press the apron into more intimate contact with the back in order to further aid in holding the supporting assembly in position.

A bracket 19 is secured to the cross member 14 by screws 20 or the like which pass through the apron 15 and engage the cross member, thus to additionally secure the apron. The bracket is provided with an outwardly extending arm 21 which has an opening extending transversely through the free end thereof. The free end of the arm 21 is rounded and provided with an annular series of serrations or teeth 22 which cooperate with similar teeth at the adjacent end of a link 23, the opposite end of which is also provided with a series of similar teeth 24. The teeth 24 are adapted to cooperate and interengage with similar teeth at the adjacent end of an arm 25. Both ends of the link 23 are apertured, as is the adjacent end of the arm 25, to receive pins 26, 27 carried by a link 28 which is opposed to the link 23 and on opposite sides of the arms 21, 25. A bolt 29 is carried by the link 23 and extends through the opposed link 28 to receive a wing nut 30 which serves as a single means for maintaining the links and arm 25 in various positions of adjustment. It will be seen that the links move in unison and that the pins 26, 27 provide the pivotal connections between the links and the arms 21, 25. Release or loosening of the wing nut 30 will permit the links to separate slightly and release the teeth 22, 24 from interengagement and this will permit the links and arm 25 to be adjusted relative to each other and to the arm 21. The opposite end of the arm 25 is also provided with serrations or teeth 31 in an annular ring or series and carries a bolt 32 extending transversely therethrough.

The bolt 32 passes through an extension 33 on a bracket member 34 which serves to support the combined head and neck rest. The extension 33 has teeth or serrations 35 opposed to the teeth 31 on the arm 25 and between these two series of teeth there is disposed a resilient shock and vibration absorbing washer 36 which may be of rubber or other suitable material. A wing nut 37 threadedly engages the free end of the bolt 32 and serves as a means for maintaining the relative positions of the arm 25 and bracket 34. As shown in Figure 3, the head and neck rest includes a curved and semi U-shaped member 38 which is secured to the bracket member 34 by bolts, rivets or the like. Thus, as more clearly shown in Figures 1 and 2, the member 38 provides the backing or rigidifying support for the cushion 39 and maintains the cushion around the back of the head and neck of the occupant and also forwardly along the sides of the head and neck to give the desired protection against lateral movements of the head. The cushion 39 includes an envelope or covering of leather or other suitable material and this covering 40 is secured between the backing member 38 and the bracket 34. The covering is partially filled with a suitable stuffing and cushioning material so that the relatively loose covering is maintained forwardly of the backing member 38. There is thus provided a head and neck receiving cushion which extends forwardly to cushion the sides of the head and neck against lateral movement. The relatively rigid backing 38 maintains the cushion in proper shape even though the cushion is relatively thick and soft.

From the foregoing description, it will be readily appreciated that the present invention

provides an improved head and neck rest which effectively supports the head and neck at the back and sides thereof in a manner which substantially eliminates vibration effects and minor or even violent stresses resulting from various movements of the vehicle in which the device is installed. The position of the support can be easily adjusted with respect to the seat by simple manipulation of the wing nuts 30, 37 permitting various angular adjustments of the links, arm 25 and brackets 19, 34 on the pivots provided by the pins 26, 27 and the bolt 32. The washer 36 aids in reducing vibration and such a washer could, if desired, be employed between the teeth 22 or 24. The strap members 10, 11 provide a secure but readily removable connection between the rest assembly and the back of the seat and this connection is further assisted by the occupant in bearing against the apron 15 which adds frictional resistance tending to prevent any movement of the assembly from its proper position even under violent movements of the vehicle. It is to be noted that the top edge 38a of the U-shaped backing 38 is curved rearwardly from the opposite front ends of the bottom edge thereof. This construction is such that the U-shaped backing 38 extends forwardly a maximum distance at the bottom portion thereof so as to provide increased support and protection against side movements along the sides of the neck and basal portion of the head of the occupant.

While one form of the invention has been shown for purposes of illustration, it is to be clearly understood that various changes in the details of construction and arrangement of parts may be made without in any way departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. A head and neck support assembly adapted for attachment to a seat and comprising a transversely extending bracing member adapted to rest on the top of the seat back, a pair of strap members connected to said bracing member adjacent the ends thereof and including hook portions extending rearwardly thereof to hook over the back of the seat and portions depending forwardly thereof to rest upon the front of the seat, an apron extending across said strap members and secured thereto to provide a friction surface between the forwardly extending portions thereof and against which the occupant rests to assist in preventing movement of the assembly relative to the seat, bracket means secured substantially centrally of said bracing member and projecting substantially vertically therefrom, a cushioning pad confining the back and sides of the head and neck of an occupant, and means for adjustably connecting said cushioning pad to said bracket means.

2. A head and neck support assembly adapted for attachment to a seat and comprising a transversely extending bracing member adapted to rest on the top of the seat back, a pair of strap members connected adjacent the ends of said bracing member and each including a rearwardly extending short hook portion to hook over and engage the back of the seat, each of said strap members also including a substantially elongated depending forward portion which is adapted to rest against the front of the seat back, an apron extending across and secured to said strap members to provide a friction surface between the depending forward portions thereof, said forward portions being elongated to such an extent that sub-

5

stantially the entire back of the occupant will rest and press against the apron to increase frictional resistance with the seat back and prevent relative movement of the assembly with respect to the seat, a cushioning pad confining the back and sides of the head and neck of the occupant, and means for adjustably connecting said cushioning pad to said bracing member.

3. A head and neck support assembly as claimed in claim 2, wherein bracket means supports the cushioning pad which is U-shaped in cross section with the lower front edges thereof projected substantially forwardly to engage the sides of the neck of an occupant.

GEORGE F. BRADY.

#### REFERENCES CITED

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

|    | Number  |
|----|---------|
| 20 | 118,340 |
|    | 16,274  |

6

#### UNITED STATES PATENTS

|    | Number    | Name          | Date          |
|----|-----------|---------------|---------------|
|    | 42,084    | Hambujer      | Mar. 29, 1864 |
|    | 48,586    | Phelps        | July 4, 1865  |
| 5  | 98,077    | Loveless      | Dec. 21, 1869 |
|    | 122,165   | Giffing       | Dec. 26, 1871 |
|    | 344,726   | Dolton        | June 29, 1886 |
|    | 379,987   | Ryan          | Mar. 27, 1888 |
|    | 430,731   | Dobson et al. | June 24, 1890 |
| 10 | 522,192   | Browne        | July 3, 1894  |
|    | 531,165   | Denio         | Dec. 18, 1894 |
|    | 1,686,631 | May           | Oct. 9, 1928  |
|    | 1,837,406 | Campbell      | Dec. 22, 1931 |
|    | 2,020,573 | Pumphrey      | Nov. 12, 1935 |
| 15 | 2,190,395 | Brady         | Feb. 13, 1940 |
|    | 2,429,472 | Maxson        | Oct. 21, 1947 |

#### FOREIGN PATENTS

|  | Country       | Date          |
|--|---------------|---------------|
|  | Germany       | Mar. 8, 1901  |
|  | Great Britain | Aug. 30, 1895 |