Dec. 22, 1942. P. S. COSTAS 2,306,334

HEADREST

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Fig. 1.

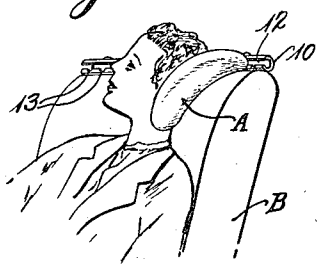


Fig. 2.

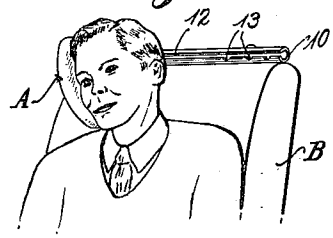


Fig. 3.

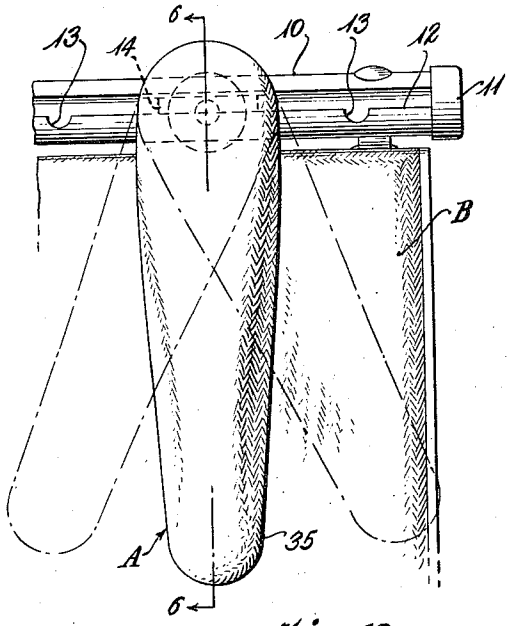


Fig. 4.

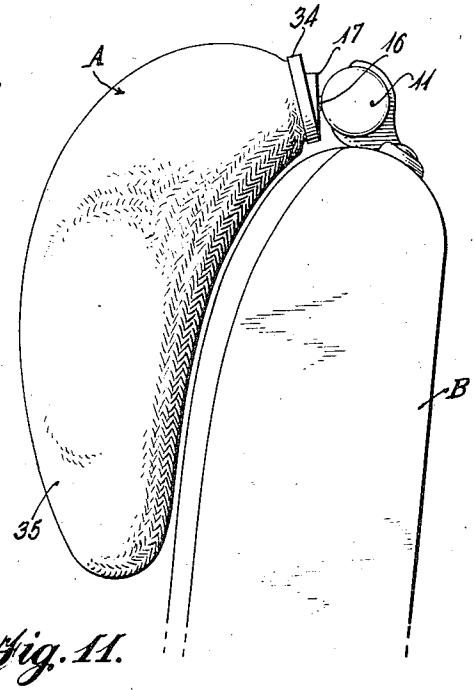


Fig. 10.

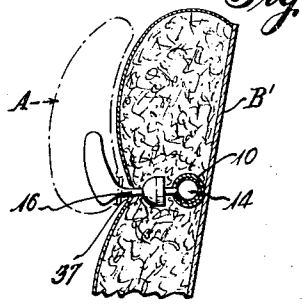
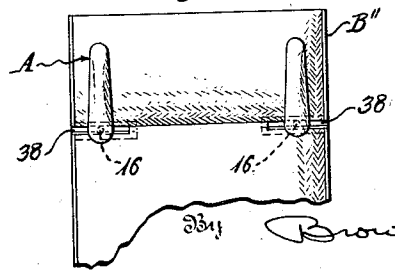


Fig. 11.



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Fig. 6.

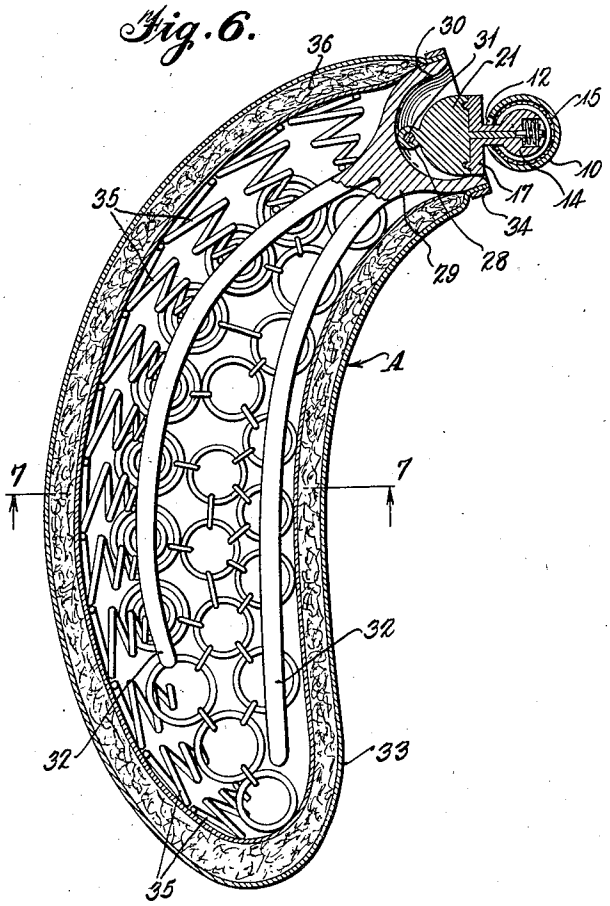


Fig. 5.

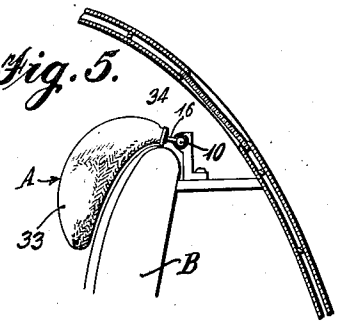


Fig. 7.

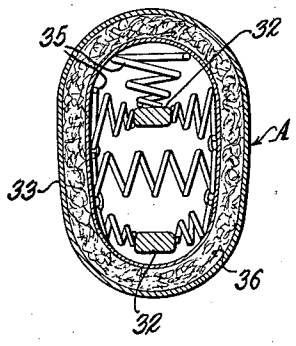


Fig. 8.

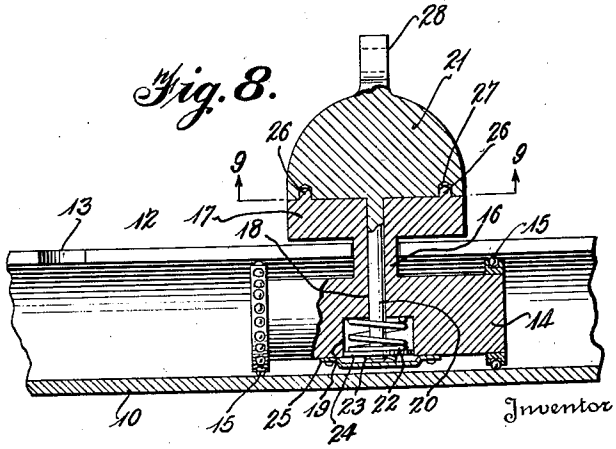
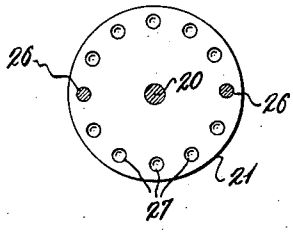


Fig. 9.



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Patented Dec. 22, 1942

2,306,334

UNITED STATES PATENT OFFICE

2,306,334

HEADREST

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Application April 3, 1940, Serial No. 327,704

9 Claims. (Cl. 155—177)

The invention relates to headrests and more particularly to a type of such device adapted for attachment to existing constructions of automobile, bus, railway car and similar seating arrangements whereby to provide an effective and comfortable means for the support of the head of a seat occupant when such occupant desires to assume a position for either relaxation or sleep.

While primarily intended as an attachment to existing constructions, the device may be incorporated in new constructions as a unitary portion thereof. To this end, the invention consists in the novel arrangement of parts shown in the accompanying drawings in which:

Figure 1 is a perspective view of the device applied to a seat back and in position for support of the head in relaxation;

Fig. 2 is a similar view showing the device in position entirely supporting the head in sleeping position;

Fig. 3 is an enlarged detail showing in dotted lines certain positions of the actual adjustment;

Fig. 4 is a side elevation;

Fig. 5 shows the device attached to a seat of an automobile;

Fig. 6 is a section on line 6—6 of Figure 3;

Fig. 7 is a section on line 7—7 of Figure 6;

Fig. 8 is an enlarged section through the support for the device;

Fig. 9 is a section on line 9—9 of Figure 8;

Fig. 10 is a vertical sectional view showing the invention in connection with a different form of seat back; and

Fig. 11 is a front elevation of a modified form of the invention.

More specifically, numeral 10 represents a horizontal track which is preferably tubular, closed at each end by caps 11, and has a horizontal slot 12 formed therein, said slot 12 being provided in its lower edge with a plurality of notches 13, 13 for purposes hereinafter to be explained. Such track is fastened in any suitable manner to and across a seat back B.

Mounted for horizontal travel within the track 10 is a slide 14 carrying ball bearing devices 15, 15 at each end and having an extension 16 projecting therefrom, and of the same diameter in cross section as the diameter of the notches 13. Carried by the extension 16 exteriorly of track 10 is an enlarged plate 17 having a central bore 18 terminating in a cut-out portion or recess 19 in the slide 14.

In the bore 18 is journalled a rod 20 which is an integral extension of a head 21. Located within the recess 19 of the slide 14 is a coiled spring 22 surrounding the rod 20 and serving by means of a cotter pin or similar device 23 and washer 24 to normally retract or force the rod 20 and the head 21 carried thereby rearwardly into the position shown in Figure 8. A suitable cover device 25 is applied over the recess 19.

The outermost face of the plate 17 is provided with a plurality of pins or projections 26, 26 adapted to engage, at the will of the operator, with a series of holes 27, 27 cut in the rearward face of the head 21. The head 21 is further forwardly extended to provide an eye 28.

Attached to the eye 28 is a suitable rest or support for the head which is generally designated "A." Such rest A may be of any preferred construction and, for instance, has a frame member 29 therein, one end of which is of socket form as at 30 and in which the head 21 is disposed. Such socket 30 is relatively large with respect to the head 21, and the latter is pivotally connected thereto by a pin or the like 31.

The frame 29 is of skeletonized form having for instance one or more separated arms 32. A leather, mohair, rubber, textile fabric or other flexible exterior envelope-like covering 33 encloses the frame 29 and is fastened at 34 around the socket 30 thereof. Within the covering 33 I use suitable cushion structure which may consist of interconnected coil springs or other cushioning devices 35 positioned by arms 32, and between the devices 35 and in contact with covering 33, I use padding of fibrous material, feathers, down or the equivalent 36. Said springs 35, in addition to their cushioning function, aid greatly in maintaining the general shape and contour of the rest A.

It is to be understood that said rest A may be rendered flexible or upholstered in any suitable manner as that described is but one example. For instance, I may resort to a body disposed about the frame 29, without the springs, and which body may be of sponge rubber or any equivalent thereof.

Arms 32 preferably terminate a distance above the lower end of the rest A in order to provide maximum softness by flexibility at such end as is desirable if the head of the passenger engages only that high. Also the outer convex portion of the rest A should have maximum softness of flexibility to engage the head when the latter merely rests thereon and to this end the arms 32 are located approximately centrally within the rest or otherwise spaced from such convex portion.

Figures 1 and 2 make it clear that the rest

may be engaged by the head at either the right or left. The rest A may be moved as a whole axially of the track 10 upon lifting the rest sufficiently to disengage the extension 16 from the adjacent notch 13 and then sliding the rest with such extension moving in slot 12 to the desired position and permitting it to drop into the adjacent notch 13. The rest may be adjusted to and secured at any desired angle by pulling the rest outwardly against the tension of the spring 22 sufficiently to disengage head 21 from the projection 26, then turning the rest about the axis of rod 20 and releasing the rest so that the openings 27 register with and receive the adjacent registering projections 26. In this manner, the two angular adjustments of Figures 1 and 2 may be obtained and the rest may be adjusted from the normal full line position in Figure 3 to the dotted line positions at either side thereof shown in the same figure, particularly so that the rest will be disposed at such an angle that the head may engage the upper portion thereof without contact of the shoulders or the body with the same.

It will be realized too that the headrest may turn on the axis of rod 20 a full 360° so that the headrest may be moved entirely above the back B out of the way or to be engaged by the head of an unusually tall passenger. It is to be understood that the rail 10 may be attached adjacent the top of the back B or at any desired elevation.

In Figure 10 the invention is used in connection with a back B' which is much higher than the back B. In connection with this back B' the invention is located interiorly of the back and usually in spaced relation to the top, the same reference characters being applied to my improvements as in the preceding form with the exception that the laterally sliding movement of the extension 16 is accommodated in a transverse opening or slot 37 provided in the upholstery of the said back B', as shown.

Another modification is illustrated in Figure 11 where the invention is used at both sides of a back B'' of the general type shown in Figure 10. In this form of Figure 11 the invention is used at both the right and left hand sides of the back with the rail 10 extending completely across the back interiorly thereof or with separate rails relatively short, with the extensions 16 extending through relatively short openings or slots 38 in the back B''.

If desired the invention in the form of Figure 11 need not provide for sliding movement of the headrests but such headrests are mounted for the swinging movement or angular adjustment as in all of the preceding forms.

When it is desired to rest the head against the device merely for relaxation, as best suggested in Figure 1, the side of the head will engage the rest and at the same time the back of the head will engage the upholstery at the top of the back of the seat. For sleeping purposes, as best shown in Figure 2, the rest is adjusted to the most advantageous angle and the side of the head reposes thereon and the entire weight of the head is usually imposed on the rest.

Attention is called to the fact that the movement or play permitted by the pin 31 and head 21 within the socket 30 enables the rest to be moved slightly independently of the remainder of the structure, so that the rest will accommodate itself to uneven backs and will enable upholstery protectors to be disposed and accommodated beneath the same.

It is obvious that when the rest A is not in use, it may be located at either end of the slot 12 and tilted to the left or right as the case may be to clear the seat back.

Minor changes may be made in the physical embodiments of the invention within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A headrest structure comprising a rail for mounting on a seat back, a slide mounted by the rail and constrained to slide rectilinearly thereby, a headrest member, and means attaching the headrest member on said slide for adjustment angularly on an axis extending forwardly with respect to the slide, said slide having a limited rocking movement on its longitudinal axis, and means on the rail engageable by said slide through said rocking movement to hold the slide in adjusted positions.

2. A headrest structure having a rail for mounting on a seat back, a slide mounted by said rail, a headrest member engageable at the same time that the head contacts the seat back, said headrest member being angularly adjustable on said slide on an axis extending forwardly with respect to and intersecting the slide, interengaging means between the headrest member and slide disengageable through forward movement of the headrest member, said slide having a recess, and a spring housed in said recess normally maintaining the interengaging means effective.

3. A headrest structure having a hollow rail for mounting on a seat back of a height for the head of an occupant to rest against, a slide mounted within said rail, a head member angularly adjustable on said slide on an axis extending forwardly with respect to and intersecting the slide, said head member having a limited sliding movement along the axis, a resilient means carried by the slide, means on the head member disposed in the slide normally preventing the said limited sliding forward movement and displaceable through movement of the head member, interengaging means between said head member and slide to maintain the head member in angularly adjusted positions, and a head rest carried by said head member.

4. A headrest structure having a hollow rail for mounting on a seat back, a slide disposed within said rail, said rail having a slot, said slide having an extension projecting forwardly through said slot, the rail at said slot having notches engageable by said extension to prevent accidental movement of the slide, a plate on said extension exteriorly of the rail, a head having means angularly and slidably connecting it to said plate, interengaging means between said head and plate to hold the head in angularly adjusted positions, and a headrest attached to said head.

5. A headrest structure having a hollow rail for mounting on a seat back, a slide disposed within said rail, said rail having a slot, said slide having an extension projecting forwardly through said slot, the rail at said slot having notches engageable by said extension to prevent accidental movement of the slide, a plate on said extension exteriorly of the rail, a head having means angularly and slidably connecting it to said plate, interengaging means between said head and plate to hold the head in angularly adjusted positions, a headrest member having a socket portion receiving and relatively large with respect to said

head, and means pivoting said head within said socket portion.

6. A headrest structure having a hollow rail for mounting on a seat back, a slide disposed within said rail, said rail having a slot, said slide having an extension projecting forwardly through said slot, the rail at said slot having notches engageable by said extension to prevent accidental movement of the slide, a plate on said extension exteriorly of the rail, a head having a rod journalled on said slide and passing through said plate and extension, said slide having a recess, contractile spring means in said recess abutting the slide and rod to enable limited sliding movement of the head relative to the plate for angular adjustment of the head, interengaging means between the plate and head to hold the latter at different angular adjustments, and a headrest member attached to said head.

7. A headrest structure having a hollow rail for mounting on a seat back, a slide disposed within said rail, said rail having a slot, said slide having an extension projecting forwardly through said slot, the rail at said slot having notches engageable by said extension to prevent accidental movement of the slide, a plate on said extension exteriorly of the rail, a head having a rod journalled on said slide and passing through said plate and extension, said slide having a recess, contractile spring means in said recess abutting the slide and rod to enable limited sliding movement of the head relative to the plate for angular adjustment of the head, interengaging means between the plate and head to hold the latter at different angular adjustments, bearing means carried by the slide for engagement with the interior wall of the rail, said headrest member having a frame element provided with a socket portion receiving and relatively large with respect to said head, a pivotal connection between said socket portion and said head, and a body of relatively soft material carried by said frame member to form a headrest.

8. In combination with a seat back of a height for the head of an occupant to rest against, a headrest disposed directly in front of and relatively close to said back whereby it is constructed and arranged for engagement by a side of a head of an occupant while the rear of the head is engaged with the seat back, and means within the back mounting said headrest for angular adjustment on an axis approximately transverse to and intersecting the front surface of said seat back.

9. A headrest structure having a rail for mounting on a seat back, a slide mounted on said rail, a headrest member engageable at the same time that the head contacts the seat back, said headrest member being angularly adjustable on said slide on an axis extending forwardly with respect to and intersecting the slide, and normally interengaged means between the headrest member and slide disengageable through forward movement of the headrest member.

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