

June 3, 1952

H. A. EVEREST ET AL

2,598,985

ADJUSTABLE LEG REST FOR WHEEL CHAIRS

Filed Feb. 4, 1950

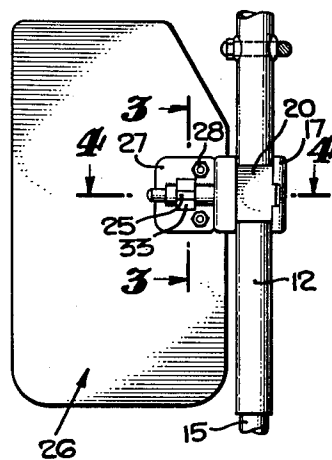
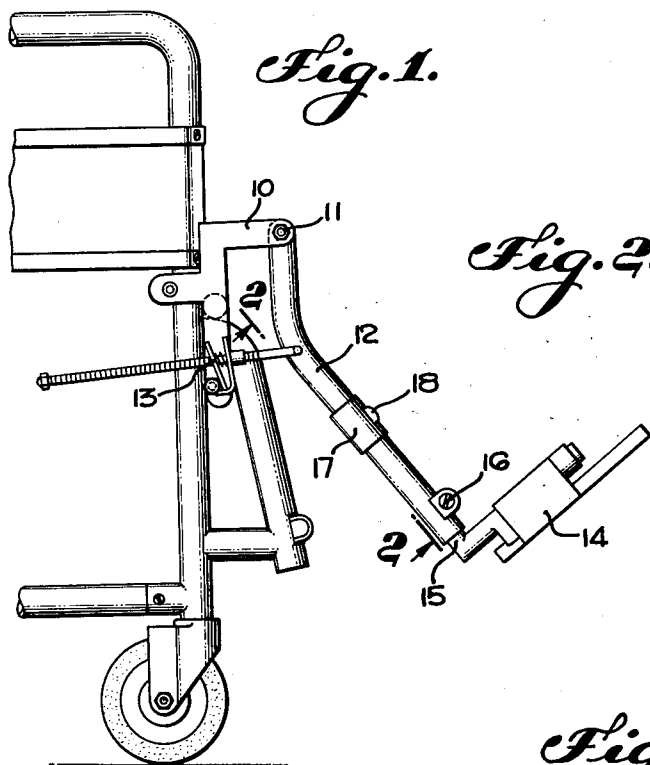


Fig. 3.

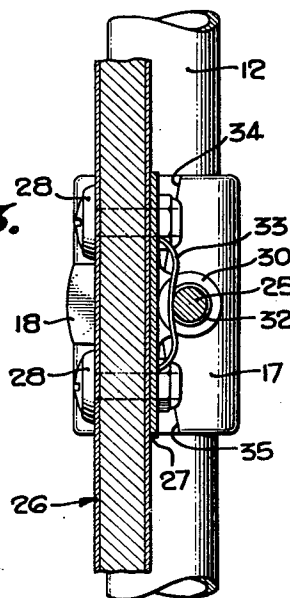


Fig. 4.

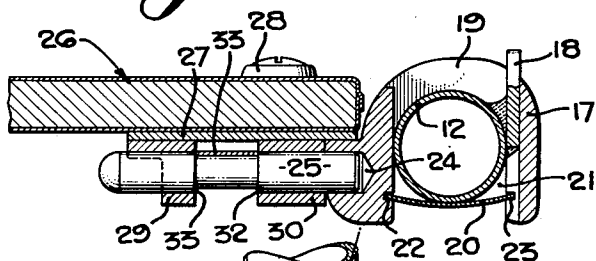
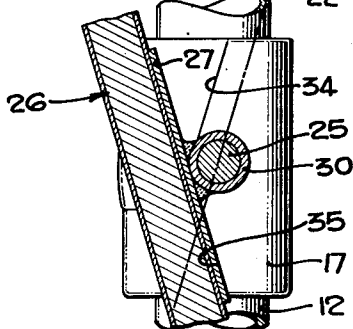


Fig. 5.



HERBERT A. EVEREST
HARRY C. JENNINGS
INVENTORS

BY

Hazard & Miller
ATTORNEYS

UNITED STATES PATENT OFFICE

2,598,985

ADJUSTABLE LEG REST FOR WHEEL CHAIRS

Herbert A. Everest and Harry C. Jennings,
Los Angeles, Calif.

Application February 4, 1950, Serial No. 142,372

10 Claims. (Cl. 155—171)

1

This invention relates to an adjustable leg rest for wheel chairs.

A primary object of the invention is to provide a means for mounting a leg rest on the foot rest support of an invalid's wheel chair so that the leg rest is pivotally adjustable between limits about a horizontal axis. Heretofore invalids' wheel chairs have been provided wherein the leg rest was rotatably adjustable about the axis of the foot rest support so that it could optionally assume a position to support the leg of the user or it could be swung into a position extending forwardly therefrom when not used or not desired. Although such leg rests were thus adjustable about the axis of the foot rest support, they have heretofore not been adjustable about a horizontal axis. Consequently, in certain situations the back of the leg of the invalid using the chair might engage the top edge of the leg rest support which engagement would shortly become quite uncomfortable. By having the leg rest support tiltably adjustable between limits for tilting movement about a horizontal axis, the leg rest support can adjust itself or accommodate itself to the leg of the user.

Another object of the present invention is to provide a simple and sturdy bracket that can be easily applied to a foot rest support so as to adjustably mount a leg rest thereon and which is so designed that the bracket will be frictionally held in any adjusted position and can be maintained in a tight condition at all times so as to prevent objectionable rattling.

Still a further object of the present invention is to provide a simple but highly effective mechanism for tiltably supporting a leg rest on a pin carried by the bracket so that the leg rest will be frictionally held in any adjusted position and maintained against rattling and will be effectively locked in place on the pin by the same spring which frictionally holds the leg rest in any adjusted position.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a view in side elevation of the forward portion of an invalid's wheel chair illustrating a form of foot rest support thereon and showing the improved leg rest as having been applied thereto;

Fig. 2 is a partial view taken substantially upon the line 2—2 upon Fig. 1 in the direction indicated;

2

Fig. 3 is a partial view in vertical section on an enlarged scale taken substantially upon the line 3—3 upon Fig. 2 in the direction indicated;

Fig. 4 is a partial view in horizontal section taken substantially upon the line 4—4 upon Fig. 2; and

Fig. 5 is a partial view in vertical section illustrating the manner in which the leg rest can be tilted relative to its supporting bracket.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the leg rest embodying the present invention may be applied to any preferred or conventional type of foot rest support.

However, for purposes of illustration we have shown the leg rest as having been applied to a foot rest support of the type shown in our co-pending application Serial No. 107,874, filed August 1, 1949, entitled "Detachable Foot Rest for Wheel Chairs." As illustrated in that application, a bracket 10 is secured to each forward leg of the wheel chair frame so as to provide a pivot at 11 located forwardly of the seat of the chair, the axis of which is intended to be approximately coincident with the axis of swing at the invalid's knee. The foot rest support indicated at 12 is preferably formed of tubing and extends downwardly and forwardly from the pivot 11 and can be held in any adjusted position by means of the adjusting mechanism generally indicated at 13. The foot rest indicated at 14 has a shank 15 telescoping into the lower end of the foot rest support 12 and held in any adjusted position therein by means of a clamp operable by a screw 16.

The leg rest embodying the present invention consists of a channel-shaped bracket 17 the channel of which is of sufficient width to accommodate the tubular foot rest support 12. This bracket is applied over the foot rest support 12 at the location of a tangential lug 18 that is brazed or otherwise secured to the foot rest support 12. The lug 18 extends through a slot 19 in the back of the bracket and serves to hold the bracket against sliding in an axial direction with relation to the foot rest support 12. Its engagement with the ends of the slot 19 serves to limit swinging or rotary movement of the bracket relative to the foot rest support. As a means for frictionally holding the bracket in any adjusted positions between these limits and for maintaining the bracket in applied position about the foot rest support, a thin sheet metal spring 20 bridges the open side of the channel 21. This spring is flexed intermediate its side edges which edges are anchored in grooves 22 and 23 in the sides of the

3

channel. The pressure exerted by this spring against the rear side of the foot rest support causes the bracket to press firmly at all times against the foot rest support so that it will not rattle and the frictional engagement between the bracket, the spring 20 and the foot rest support causes the bracket to be frictionally held in any adjusted position. However, on manually overcoming the friction the bracket can be forcibly swung or rotated about the axis of the foot rest support 12 between the limits established by the lug 18 engaging the ends of the slot 19.

On the inner side of the bracket there is a recess 24 into which a pin 25 is pressed or otherwise secured. This pin serves to provide a horizontal mounting for the leg rest generally indicated at 26. This leg rest consists of a covered panel of plywood, Masonite, or equivalent composition and has a plate 27 secured to its rear side such as by bolts 28. The plate has spaced knuckles 29 and 30 brazed or otherwise secured thereto through which the pin 25 extends, thus providing a rotary or pivotal mounting for the leg rest on the bracket. The axis of the pivot or tilt of the leg rest is disposed intermediate the top and bottom of the leg rest and is coincident with the axis of the pin 25. As a means for locking the leg rest on the pin 25 and frictionally holding the leg rest in any position to which it is adjustable the pin 25 has that portion of its length which is between the knuckles 29 and 30 of slightly reduced diameter thus forming shoulders 31 and 32 which are flush with the opposed faces of the knuckles. A leaf spring 33 is positioned between the pin 25 and the plate 27. This spring has its ends bent toward the plate 27 so as to be engageable therewith and intermediate its ends the spring fits between the shoulders 31 and 32 and extends across the opposed faces of the two knuckles 29 and 30. In assembling the leg rest on the pin 25 it is merely necessary to slip the knuckles 29 and 30 onto the pin and when the opposed faces of the knuckles are flush with the shoulders 31 and 32 to insert the spring 33 the spring consequently not only locks the leg rest on the pin against withdrawal therefrom but it provides the required friction to hold the leg rest in any adjusted position although on overcoming the friction the leg rest may be adjustably tilted.

As will be noted from Figs. 4 and 5, the outer edge of the leg rest extends over the bracket 17 a short distance so as to be engageable with either of two shoulders 34 and 35. These shoulders, on being engaged by the leg rest, serve to limit the tilting movement of the leg rest relative to the pin 25.

From the above described construction it will be appreciated that the improved leg rest is highly advantageous in that it is tiltably adjustable about a horizontal axis provided by the pin 25. Consequently between the limits afforded by the shoulders 34 and 35 the leg rest may accommodate itself or adjust itself to the back of the leg of the invalid. Whenever the leg rest is undesired it may be forcibly swung about the axis of the foot rest support 12 and during such swinging movement the bracket 17 merely turns relatively to the foot rest support 12. The construction is such that the bracket can be easily and quickly assembled with the foot rest in that it is merely necessary to apply the bracket over the foot rest support at a position wherein the lug 18 will enter the slot 19 and then force the spring 20 into a position such that its side edges

4

enters the grooves 22 and 23. The bracket being thus spring-urged against the support 12 at all times will not rattle and will remain in adjusted position. Similarly the mounting formed between the leg rest support 26 and the pin 25 is such that it will not rattle and the leg rest will remain in any adjusted position until forcibly moved therefrom. If at any time it is desired to remove the leg rest for any reason the spring 33 can be removed thus freeing the knuckles 29 and 30 so that they can be slipped off of the pin. Also, on removal of the spring 20 the bracket 17 can be easily and quickly removed from the leg rest support.

Various changes may be made in the details of the construction without departing from the spirit and scope of the invention as defined by the appended claims.

We claim:

1. In combination with the foot rest support of an invalid's wheel chair, a leg rest mounted thereon so as to be engageable by the back of the leg of the user, said leg rest being rotatably mounted upon said support for pivotal movement about a transversely extending axis between limits.

2. In combination with the foot rest support of an invalid's wheel chair, a leg rest mounted thereon so as to be engageable by the back of the leg of the user, said leg rest being rotatably mounted upon said support for pivotal movement about a transversely extending axis between limits, and means for frictionally holding the leg rest in adjusted position about said axis.

3. In combination with the foot rest support of an invalid's wheel chair, a bracket mounted for rotary adjustment thereon between limits, and a leg rest mounted intermediate its ends for rotary adjustment between limits upon said bracket.

4. In combination with the foot rest support of an invalid's wheel chair, a bracket mounted for rotary adjustment thereon between limits, and a leg rest mounted for rotary adjustment between limits upon said bracket about an axis at right angles to the axis of adjustment of the bracket relative to said support.

5. In combination with the foot rest support of an invalid's wheel chair, a bracket rotatably adjustable between limits upon said support for adjustment about the axis of the support, and a leg rest tiltably mounted upon the bracket for tilting movement about an axis at right angles to said support.

6. A bracket for adjustably mounting a leg rest on a cylindrical support therefor comprising a channel-shaped bracket in which the support is positioned, and a flexed spring extending across the open side of the channel of the bracket confining the support therein, said spring having its side edges anchored in the sides of the channel and bearing upon the support.

7. Means for adjustably mounting a leg rest on the foot rest support of a wheel chair comprising a channel-shaped bracket on which the leg rest is mounted and through the channel of which the foot rest support extends, a flexed spring having its side edges anchored in the sides of the channel and bearing upon the support, there being a lug on the support extending through a slot in the bracket limiting rotation of the bracket relative to the support and preventing longitudinal movement of the bracket on the support.

8. Means for adjustably mounting a leg rest

5

on the foot rest support of a wheel chair comprising a channel-shaped bracket on which the leg rest is mounted and through the channel of which the foot rest support extends, a flexed spring having its side edges anchored in the sides of the channel and bearing upon the support, there being a lug on the support extending through a slot in the bracket limiting rotation of the bracket relative to the support and preventing longitudinal movement of the bracket on the support, a pin extending laterally from the bracket, the leg rest being rotatably adjustable on the pin.

9. Means for adjustably mounting a leg rest on the foot rest support of a wheel chair comprising a channel-shaped bracket on which the leg rest is mounted and through the channel of which the foot rest support extends, a flexed spring having its side edges anchored in the sides of the channel and bearing upon the support, there being a lug on the support extending through a slot in the bracket limiting rotation of the bracket relative to the support and preventing longitudinal movement of the bracket on the support, a pin extending laterally from the bracket, the leg rest being rotatably adjustable on the pin, and shoulders on the bracket engageable by the leg rest for limiting its rotation on the pin.

6

10. Means for adjustably mounting a leg rest on a support therefor for tilting movement about a horizontal axis comprising a pin, spaced knuckles on the leg rest through which the pin extends, the pin being of reduced diameter between the knuckles, and a spring on the leg rest disposed between the knuckles and entering the reduced diameter on the pin so as to lock the knuckles against axial movement relative to the pin and serving to frictionally hold the leg rest in adjusted position on the pin.

HERBERT A. EVEREST.
HARRY C. JENNINGS.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
278,364	Safford	May 29, 1883
2,181,420	Everest	Nov. 28, 1939
2,460,459	Kraska	Feb. 1, 1949

FOREIGN PATENTS

Number	Country	Date
664,642	France	Apr. 23, 1929