Feb. 9, 1965 P. S. FLETCHER 3,169,035

LEG-REST CONTROL ARRANGEMENT FOR RECLINING CHAIRS

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FIG. 1.

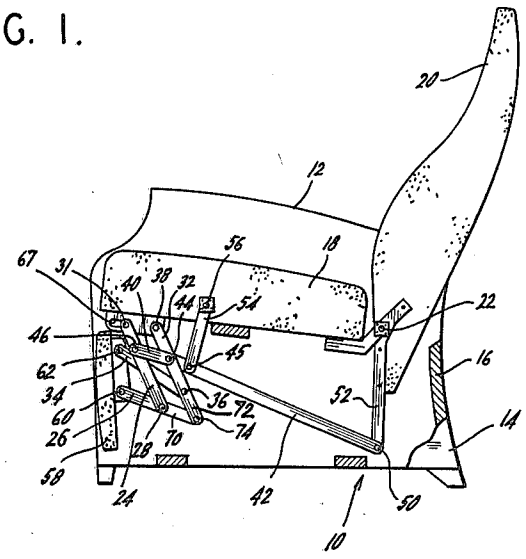

FIG. 2.

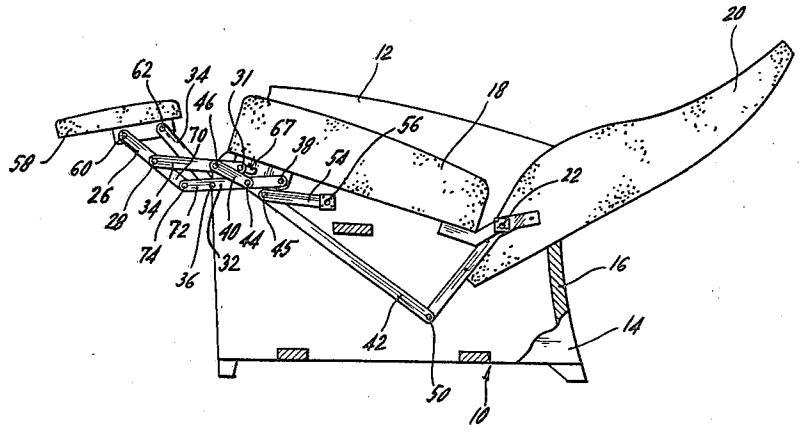

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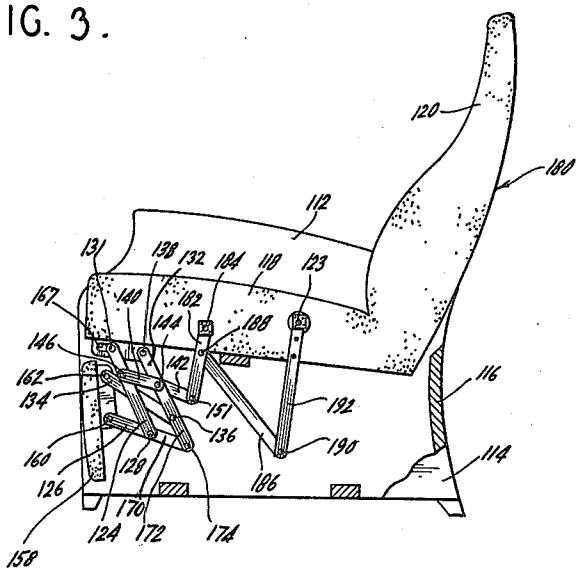
FIG. 3.



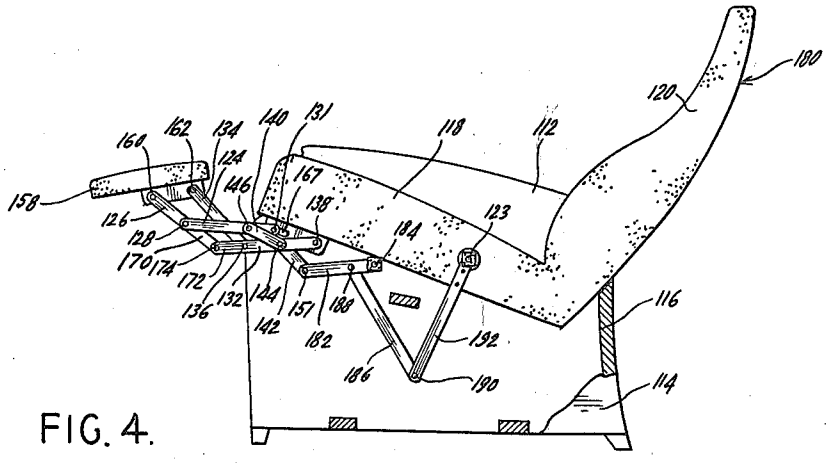


FIG. 4.

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FIG. 5.

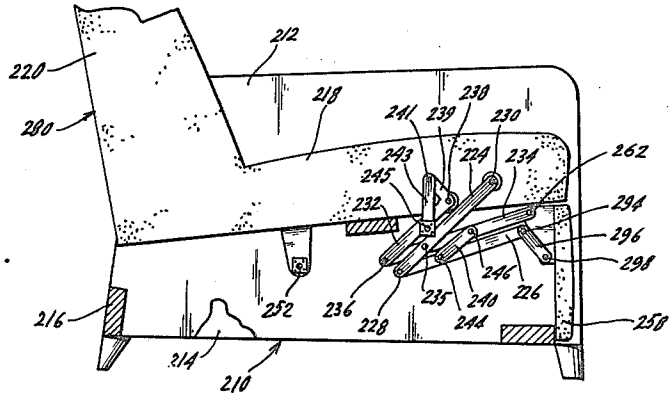

FIG. 6.

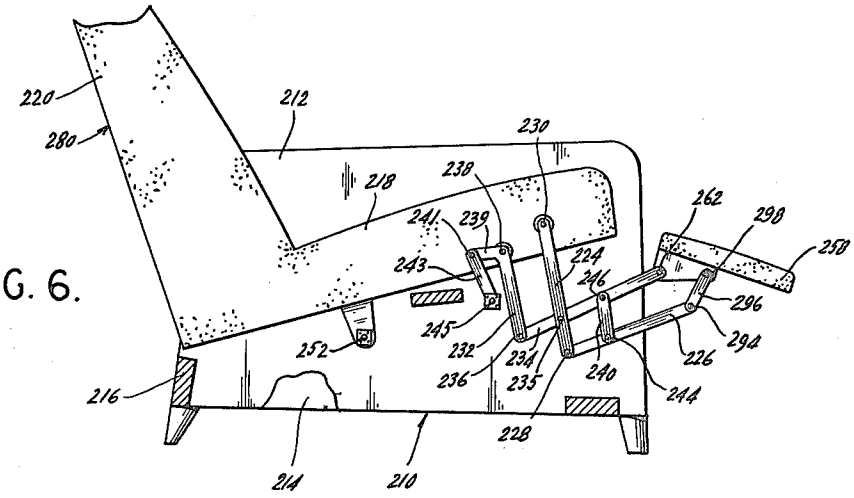

FIG. 7.

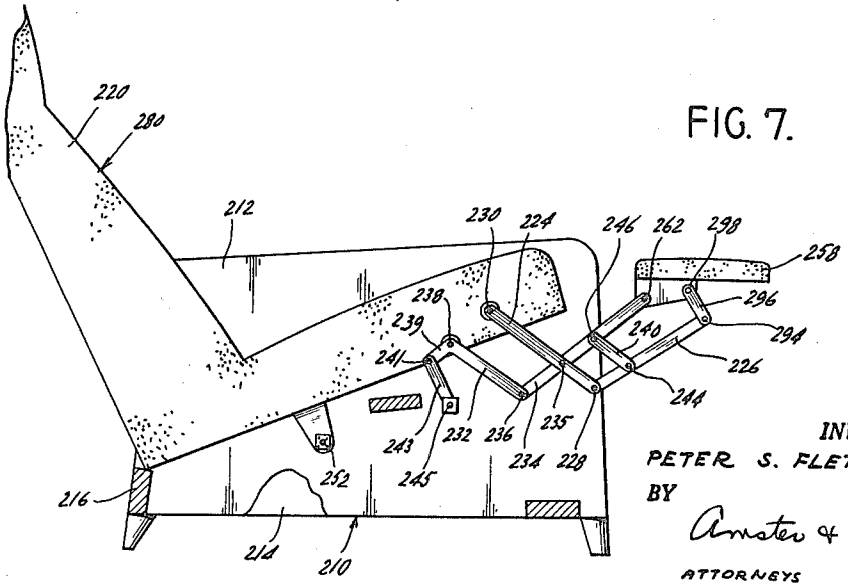

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FIG. 8.

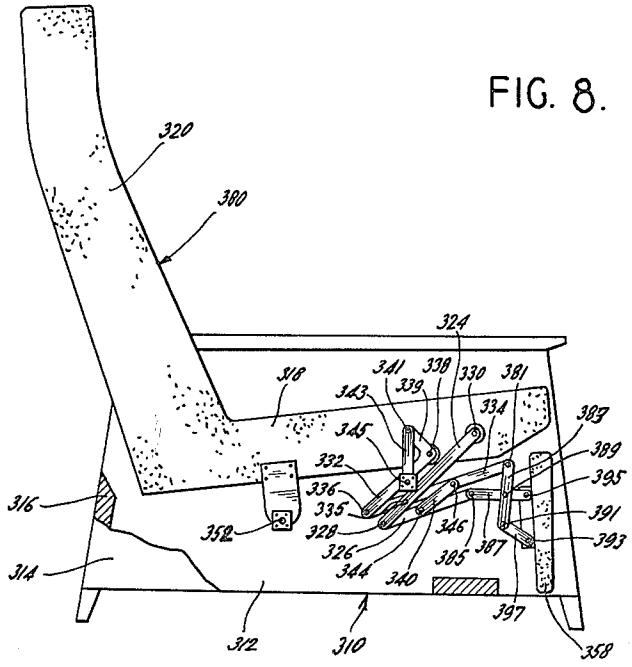
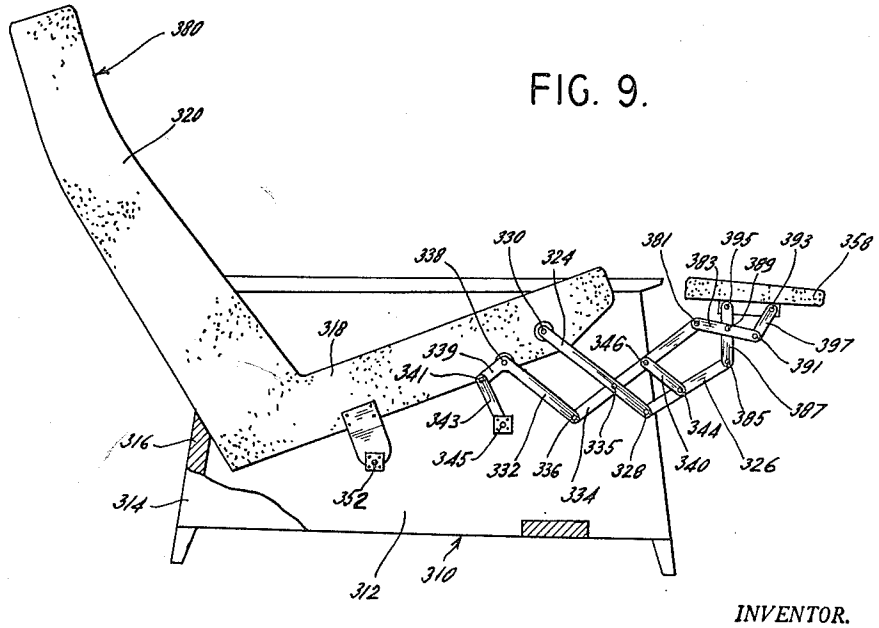


FIG. 9.



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United States Patent Office

3,169,035

Patented Feb. 9, 1965

3,169,035
LEG-REST CONTROL ARRANGEMENT FOR RECLINING CHAIRS

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Filed Sept. 14, 1959, Ser. No. 839,961
10 Claims. (Cl. 297—85)

The present invention relates to improvements in reclining chairs and in particular relates to a new and improved leg-control linkage for reclining chairs.

This application contains subject matter identical with that shown and described in my co-pending United States patent application, Serial No. 507,761 and entitled "Article of Repose for Supporting the Body of a Person" and filed May 12, 1955, now abandoned, and constitutes a continuation-in-part of the aforesaid pending application.

It is known to employ a double-four bar leg-rest linkage to mount the leg-rest of a reclining chair on the seat. Such linkages conventionally include a pair of links pivotally connected to the seat and a second pair of links pivotally connected to the leg-rest with inter-connections between the pairs of links to coordinate the movement of such pairs. The linkage controls movement of the leg-rest, and is driven by actuating means associated with the seat and back-rest so as to provide movement of the leg-rest in response to movement of the seat and back-rest.

While the aforementioned conventional double four-bar linkage arrangements provide the advantages of a freely-suspended leg-rest and a relatively long leg-rest movement, their use is restricted by their inability to be adapted to various types of desired leg-rest movements. That is to say, the size and arrangement of the links in such linkage produce a definite path of movement for the linkage and for the leg-rest carried thereby, which movement can be varied only to a very small degree.

It is the object of the present invention to provide a leg-rest linkage of the double four-bar type which is adapted to produce a variable support control for the leg-rest over a wide range of movement.

Another object of the invention is to provide a leg-rest linkage of the character described which includes a flexible connection which may be so positioned and arranged as to produce a variety of selected leg-rest movements, such as slow initial movement of the leg-rest, a wide swing of the leg-rest, rapid initial turning movement of the leg-rest, etc.

In accordance with the invention there is provided a variable support control for a leg-rest of the double four-bar linkage type including first and second pairs of links each connected end-to-end, with one end of the linkage connected to the seat or support and the other end connected to the leg-rest. One of the end connections of the double four-bar linkage is in the nature of a flexible coupling, which may be a link, a pin-and-slot coupling, or other equivalent. The flexible coupling may be directly between the double four-bar linkage and the seat or leg-rest, or between additional links added to the four-bar linkage and the seat or leg-rest.

Additional objects and advantages of the invention will be apparent during the course of the following specification when taken in connection with the accompanying drawings illustrating preferred embodiments of the invention, and in which:

FIG. 1 is a side elevational view, with parts broken away and shown in section, of a reclining chair incorporating one form of leg-rest linkage made in accordance with the invention, the chair being shown in its upright, sitting position;

FIG. 2 is a side elevational view similar to FIG. 1, but showing the chair thereof in its reclining position;

FIG. 3 is a side elevational view, with parts broken away and shown in section of a leg-rest linkage similar to that shown in FIG. 1, but incorporated in a different type of chair in which the seat and back-rest are rigid with each other, the chair being shown in an upright, sitting position;

FIG. 4 is a side elevational view, similar to FIG. 3, but showing the chair thereof in a reclining position;

FIG. 5 is a side elevational view, with parts broken away and shown in section, of a reclining chair incorporating a modified type of leg-rest control linkage and actuating linkage, the chair being shown in an upright sitting position with the leg-rest in retracted position;

FIG. 6 is a side elevational view similar to FIG. 5, but showing the chair thereof in a partially reclined position with the leg-rest partially extended;

FIG. 7 is a side elevational view similar to FIG. 5, but showing the chair thereof in a fully reclined position and the leg-rest fully extended;

FIG. 8 is a side elevational view, with parts broken away and shown in section, of a reclining chair incorporating another modified type of leg-rest control linkage, the chair being shown in an upright sitting position with the leg-rest in retracted position; and,

FIG. 9 is a side elevational view similar to FIG. 8, but showing the chair thereof in a reclined position with the leg-rest extended.

Referring in detail to the drawings, and in particular to FIGS. 1 and 2, there is shown a reclining chair having a support frame 10 which includes connected side walls 12 and 14, and a rear wall 16.

A body-supporting structure, including a seat 18 and a back-rest 20, is movably mounted on the support frame 10 for rearward pivoting movement from an upright sitting position, shown in FIG. 1, to a reclining position shown in FIG. 2. For this purpose, fixed portions of the seat 18 and back-rest 20 are mounted on the support frame 10 by a common pivot 22.

The chair also includes a leg-rest 58 which is mounted on the seat 18 by a leg-rest control linkage. The leg-rest control linkage includes a first pair of links comprising a first link 24 and a second link 26 interconnected by a pivot 28. The first link 24 is mounted by pivot pin 31 on the forward end portion of the seat 18, while the free end of the second link 26 is connected by pivot 60 to the leg-rest 58. A second pair of links comprises a third link 32 and a fourth link 34 interconnected by a pivot 36. The upper end of the third link 32 is mounted by pivot 38 on the seat 18 at a point spaced rearwardly from the pivot pin 31. The free end of the fourth link 34 is connected by pivot 62 to the leg-rest 58 at a point spaced from the pivotal connection 60.

The link 26 has an integral extension 70 which projects rearwardly beyond the pivot 28, and the link 32 has an integral extension 72 which extends below the pivot 36. These extensions 70 and 72 are connected at their ends by pivot 74.

For purposes of constraining the links 24 and 32 for movement relative to each other, a control link 40 is provided, this control link being connected at its ends to intermediate points on the links 24 and 32 by respective pivots 46 and 44. In accordance with the invention there is also provided a flexible coupling between the ends of the constrained links 24, 32 and the seat 18 upon which said links are mounted. This flexible coupling may be in any suitable form, as, for example, the form of a link as is shown in subsequent embodiments, but in FIG. 1, the flexible coupling is illustrated as a pin-and-slot connection. The pin-and-slot connection includes the pin 31 and at the end of the link 24, and a slot 67 in the seat 18, which slot slidably receives said pin 31.

Actuation of the aforementioned leg-rest control linkage is accomplished by movement of the body-supporting means through a quadric linkage which includes an actuating link 42, a back-rest extension 52, and a guide link 54. The extension 52 is rigidly affixed to the back-rest 20 and depends from the pivotal mount 22. The rear end of the actuating link 42 is connected by pivot 50 to the lower end of the back-rest extension 52. The forward end of said actuating link 42 is connected to the link 32 of the leg-rest control linkage by the pivot 44. The guide link 54 is mounted by pivot 56 on the support frame and is connected by pivot 45 to the actuating link 42. The quadric actuating linkage is thus formed of extension 52 and links 42 and 54 as movable links, and the portion of the support frame 10 between the pivots 22 and 56, as the stationary link.

In the upright, sitting position of the chair shown in FIG. 1, the seat 18 rests upon and is supported by one of the frame cross-bars, and the leg-rest is in the retracted position illustrated, beneath the forward end of the seat 18. The pin 31 is located at the rear end of the slot 67.

When the occupant exerts rearward leaning pressure against the back-rest 20, the latter turns about its fixed pivotal mount 22 and moves rearwardly to the reclining position shown in FIG. 2. This reclining position is determined and limited by engagement of the back-rest 20 with the frame rear wall 16. During such movement, the back-rest extension 52 pushes the actuating link 42 forwardly and upwardly, as determined by the guide link 54, and the actuating link 42 swings the leg-rest control linkage to the extended position shown in FIG. 2. The leg-rest 58, in this extended position, is located forwardly of the seat 18.

Because the links 24 and 32 are constrained at their lower ends by the link extension 70, and are also constrained by the control link 40, the entire leg-rest control linkage is coordinated to follow a designated movement upon actuation. The movement, however, may be varied by selectively changing the size or arrangement of the flexible coupling afforded by the pin-and-slot connection 31, 67. In the arrangement illustrated in FIG. 1, the pin 31 moves forwardly in the slot 67 during extension of the leg-rest, causing a slower swinging movement of the control linkage and the leg-rest carried thereby, as well as producing a greater extension of the leg-rest forwardly of the seat.

It will thus be appreciated that the same leg-rest control linkage may be used in a variety of reclining chairs, and a variation in movement may nevertheless be obtained to suit individual style and construction requirements, by merely selectively varying the flexible coupling to the seat. Another type of movement variation or control can be obtained by locating the flexible coupling between the linkage and the leg-rest, as will be presently explained.

The control linkage formed herein may be described as a "double four-bar" linkage since it is composed of two interconnected quadrilateral linkages. The first quadrilateral linkage is formed by the pair of seat links 24 and 32, the portion of the seat between pivots 31 and 38, and the extension 70 of link 26. The second quadrilateral linkage is formed by the pair of leg-rest links 26 and 34, the portion of the leg-rest between pivots 60 and 62, and the extension 72 of link 32. The pin-and-slot connection 31, 67 constitutes a flexible connection between the first quadrilateral linkage and the seat which enables spreading apart of the ends of the linkage at the seat connection during the extension of the leg-rest.

FIGS. 3 and 4 show a leg-rest control linkage identical to that shown in FIGS. 1 and 2, but applied to a reclining chair of the type in which seat and back-rest are formed as a rigid unit. Similar reference numerals are used for like parts, except that in this instance the reference numerals are part of a "100" series.

The reclining chairs shown in FIGS. 3 and 4 again

comprises a support frame 110 which includes connected side walls 112 and 114 and a rear wall 116.

The body-supporting structure in this instance comprises a seat 118 and a back-rest 120 formed rigidly with each other to produce a rigid integral unit 180. The body-supporting unit is mounted on the support frame 110 by a pivot 123, and rocks about said pivot 123 from the sitting position of FIG. 3 to the rearwardly tilted or reclining position of FIG. 4.

The control linkage for the leg-rest 158 again includes a first pair of links comprising a first link 124 and a second 126 interconnected by a pivot 128. The upper end of the links 124 carries a pin 131 which is slidably engaged with a slot 167 located in the seat 118. The free end of the second link 126 is connected by a pivot 160 to the leg-rest 158. The second pair of links includes a third link 132 and a fourth link 134 interconnected by pivots 136. The upper end of the third link 132 is mounted by pivot 138 on the seat 118 at a point spaced rearwardly from the pin-and-slot connection 131, 167. The free end of the fourth link 134 is connected by pivot 162 to the leg-rest 158 at a point spaced from the pivotal connection 160.

The second link 126 has an integral extension 170 which projects rearwardly from the pivot 128, and is connected by pivot 174 to a downward extension 172 of the third link 132.

The links 124 and 132 are again connected by a control link 140 which constrains said links 124 and 132 for movement relative to each other. The control link 140 is connected at its ends by respective pivots 146 and 144 to said links 124 and 132. The pin-and-slot connection 131, 167 again provides a flexible coupling between the leg-rest control linkage and the seat 118 which provides selected control of the leg-rest movement relative to the seat, in a manner which was previously described in detail.

Actuation of the leg-rest control linkage is again effected by a quadrilateral linkage connected to the body-supporting unit 180 and the support frame 110 and operable in response to movements of said body-supporting unit. The quadrilateral actuating linkage includes an extension link 192 which is affixed to the seat 118 of the body-supporting unit 180 and depends below the pivotal mount 123. The lower end of the extension link 192 is connected by a pivot 190 to an actuating link 186, the other end of which is connected by pivot 188 to a guide link 182. The guide link 182 is mounted by pivot 184 on the support frame 110 and its lower end is connected by pivot 151 to a link 142. The link 142 is connected to the leg-rest control linkage by pivots 144 which also connects the link 132 with the control link 140.

In the upright sitting position of the chair shown in FIG. 3 the seat 118 rests upon a cross-bar of the frame 110 and the leg-rest 158 is maintained in the retracted position illustrated, in which it is located beneath the forward end of the seat. When the occupant pushes rearwardly against the back-rest 120 to bring the body-supporting unit 180 to the rearwardly tilted or reclining position of FIG. 4, the extension 192 of the body-supporting unit 180 moves forwardly raising the leg-rest control linkage and the leg-rest to the extended position of FIG. 4 through the actuating link 186, guide link 182 and link 142.

Referring now specifically to FIGS. 5, 6, and 7 there is shown therein a modified leg-rest linkage made in accordance with the present invention. In this modified form, the constrained links are the pair of links which carry the leg-rest and the flexible coupling is between these links and the leg-rest. Again, similar reference numerals are employed to identify like parts, but in this instance these numerals form part of a "200" series.

The chair again includes a support frame 210 having connected side walls 212 and 214, and a rear wall 216. A body-supporting unit 280 comprising a rigidly-formed

seat 218 and back-rest 220 is mounted for tilting movement on the support frame 210 by a pivot 252. The leg-rest 258 is again carried by a leg-rest control linkage which includes a first pair of links constituting a first link 224 and a second link 226 interconnected by a pivot 228. The upper end of the first link 224 is mounted on the seat 218 by a pivot 230. The leg-rest control linkage also includes a second pair of links 232 and 234 which are connected at their ends by a pivot 236. The link 232 is mounted by pivot 238 on the seat 218 at a point spaced rearwardly from the pivot 230.

In this instance, the two leg-rest links, that is to say, the links 226 and 234 are connected by the control link 240, the control link constraining movement of said links 226 and 234 relative to each other. The ends of the control link 240 are connected by respective pivots 244 and 246 to said leg-rest links 226 and 234.

In this construction the flexible coupling is between the leg-rest link and the leg-rest and is in the form of a link instead of the pin-and-slot connection. The link 296 is connected by pivot 294 to the end of the link 226, and its other end is connected by pivot 298 to the leg-rest 258. The other leg-rest link 234 is connected directly to the leg-rest 258 by a pivot 262.

To complete the construction of the leg-rest control linkage, the links 224 and 234 are connected to each other at their crossing over point by a pivot 235.

A modified type of actuating means for the leg-rest linkage is shown in FIGS. 5 through 7. Such actuating means includes an extension 239 of the link 232, which extension is connected by pivot 241 to a link 243 which is mounted by pivot 245 on the support frame. The extension 239 is arranged angularly to the axis of link 232, and in the upright sitting position of the chair shown in FIG. 5, said extension 239 is directed upwardly and rearwardly. When the body-supporting unit 280 is tilted rearwardly toward its reclining position of FIG. 7, the link 232 and its extension 239 are raised with the seat 218. The link 243 however, because of its fixed pivotal connection 245 to the support frame, acts as a restraining force on the rear end portion of the link extension 239 and therefore causes the extension 239 and link 232 to turn about the pivotal mount 238 on seat 218. The link 232 therefore swings forwardly and carries with it the remainder of the leg-rest control linkage so that the leg-rest 258 is brought to the extended position of FIG. 7.

The provision of the control link 240 between the leg-rest links 226 and 234 causes the ends of said links at the respective pivots 294 and 262 to separate from each other during the reclining movements, as can be seen from a comparison of FIG. 5 and FIG. 6. This separating movement is permitted by the presence of the flexible coupling in the form of the link 296. During this movement, the link 296 is turned through a wide angle, so that the leg-rest is quickly turned about the pivot 262 from the vertical retracted position of FIG. 5. FIG. 6 illustrates this rapid swing of the leg-rest 258, such leg-rest being almost turned to a horizontal position in FIG. 6 in response to only a short movement of the body-supporting unit 280. The rapid initial swinging movement of the leg-rest is desirable for proper support of the legs through the movement of the chair from the sitting position to the reclining position of FIG. 7, and is provided by the control link 240 and the flexible coupling 296.

It will thus be appreciated that when the flexible coupling is inserted between the leg-rest control linkage and the leg-rest, the turning movement of the leg-rest itself may be varied within wide limits to permit selective movements. It will also be understood again, that instead of the link 296 serving as the flexible coupling, a pin-and-slot connection between the link 226 and the leg-rest 258 may be substituted.

The fully reclined position of FIG. 7 is determined by engagement of the rear end of the body-supporting unit

280 with the rear wall 216 of the frame. In this position the leg-rest has been brought to its extended position forwardly of and substantially at the level of the seat. The link 296 has turned through an angle of almost 180° from its position in FIG. 5.

FIGS. 8 and 9 show a leg-rest control linkage similar to that shown in FIGS. 5 through 7, but with the inclusion of additional links which provide a greater spacing between the leg-rest and the seat in the extended position. In this instance the flexible coupling is contained in an intermediate portion of the linkage.

The chair shown in FIGS. 8 and 9 again includes a support frame 310 having connected side walls 312 and 314, and a rear wall 316. The body-supporting unit 380, comprising a rigidly-formed seat 318 and back-rest 320, is mounted for tilting movement on the support frame 310 by a pivot 352.

The leg-rest 358 is carried by a leg-rest control linkage which includes a first link 324 and second link 326 interconnected by a pivot 328, and a third link 332 and a fourth link 334 connected at their ends by a pivot 336. The first link 324 is mounted on the seat 318 by pivot 330. The third link 332 is mounted by pivot 338 on the seat 318 at a point spaced rearwardly from the pivot 330.

As in the previous embodiment, the links 326 and 334 constitute the pair which carry the leg-rest 358, and are again connected by a control link 340, the control link constraining movement of said links 326 and 334 relative to each other. The ends of the control link 340 are connected by respective pivots 344 and 346 to said leg-rest links 326 and 324. The links 324 and 334 cross each other and are connected at their crossing-over point by pivot 335.

In this construction the leg-rest links 326 and 334 are not connected directly to the leg-rest, but are coupled thereto by an additional pair of links 383 and 387. One end of the link 387 is connected by pivot 385 to the end of link 326, and its other end is connected to leg-rest 358 by pivot 395. One end of link 383 is connected by pivot 381 to the end of link 334, and its other end is connected by pivot 391 to an additional link 397. The link 397 is in turn connected to the leg-rest 358 by pivot 393. The links 383 and 387 cross each other and are connected at their crossing-over point by pivot 389.

In this embodiment, the flexible coupling is again located between the constrained pair of leg-rest links 326, 334 and the leg-rest 358, but in this instance, the link 397 constituting the flexible coupling, is spaced from the ends of the leg-rest links by the additional pair of links 383, 387 which have been added. Actually, the links 383, 387 serve to effectively extend the ends of leg-rest links 326, 334 and if both such links 383, 387 were pivoted directly to the leg-rest, the ends of links 326, 334 would be constrained and could not separate. The link 397 therefore serves as a flexible coupling between link 383 and the leg-rest 358, which permits the ends of links 383 and 387 to spread apart, and thus also permits the leg-rest links 326 and 334 to spread apart at their ends carrying pivots 381 and 385.

The leg-rest control linkage is actuated by the same type of actuating means as shown in the previous embodiment. Such actuating means includes an extension 339 of the third link 332 which extends at an angle to the axis of link 332 beyond the pivotal mount 338. The extension 339 is connected by pivot 341 to a link 343 which is mounted by pivot 345 on the support frame 310. When the body-supporting unit 380 is tilted rearwardly toward its reclining position of FIG. 9, the link 332 and its extension 339 are raised with the seat 318. The link 343 however, because of its fixed pivotal connection 345 to the support frame 310, acts as a restraining force on the rear end portion of the link extension 339 and therefore causes the extension 330 and link 332 to turn about the pivotal mount 338 on seat 318. The link 332 therefore swings forwardly and carries with it the re-

mainder of the leg-rest control linkage so that the leg-rest 358 is brought to the extended position of FIG. 9.

It will be appreciated that the leg-rest linkage is arranged in the form of two interconnected quadrilateral linkages. The first quadrilateral linkage is formed by the seat links 324, 332, by the portion of the seat 318 between pivots 330 and 338, and by the portion of link 334 between pivots 335 and 336. The second quadrilateral linkage is formed by the leg-rest links 326, 334, the portion of link 324 between pivots 328 and 335, and by link 383, with link 387 coupling the free end of links 326 to link 383. Since the links 383 and 387 in this instance serve to extend the ends of the leg-rest links 326, 334, the additional link 397 can be regarded as the flexible connection between the second quadrilateral linkage and the leg-rest 358.

It will be understood that since the control link 340 constrains the free ends of the links 326 and 334, a flexible coupling must be provided between the ends of these links in order to permit them to separate in the manner shown in FIG. 9. Thus, the leg-rest 358 is provided with a rapid initial turning movement during its extension, as explained in connection with the embodiment of FIGS. 5–7, while at the same time, a greater extension forwardly of the seat is provided for the leg-rest by the inclusion of the extra links 383, 387 and 397. It is to be understood that the flexible coupling arrangement shown herein may be employed in a large variety of "double four-bar" type linkages depending upon the particular requirements of the reclining chair.

While preferred embodiments of the invention have been shown and described herein, it is obvious that numerous additions, changes and omissions may be made therein without departing from the spirit and scope of the invention.

What I claim is:

1. A variable leg-rest control arrangement for use in a chair including a support, body-supporting means comprising a seat and a back-rest movably mounted on said support for movement between an upright sitting position and a reclined position, and a leg-rest, said leg-rest control arrangement including a double four-bar lazy tong linkage comprising a first pair of spaced links operatively mounted at one end of said leg-rest and a second pair of spaced links operatively mounted at one end on said seat, means connecting said pairs of spaced links for coordinated movement thereof, a control link connecting intermediate points on one of said pairs and constraining movement of the same to complete one of said four-bar linkages, a rigid element connecting the other pair of space linkages to complete the other four-bar linkage, the operative mount of said one of said pair of links including a pivotal connection of one link to the member on which it is mounted and a flexible connection between the other link of said one pair and the member on which it is mounted, said flexible coupling providing relative movement between the completed end of said one four-bar linkage and the member on which it is mounted.

2. An improved leg-rest control arrangement for use in a chair including a support member, body-supporting means comprising a seat member and a back-rest movably mounted on said support member for rearward movement into a reclined position, and a leg-rest member, said leg-rest control arrangement including a double four-bar lazy tong linkage comprising a first pair of spaced links and a second pair of spaced links, the links of the first pair being connected to spaced points on a link of the second pair and the links of the second pair being connected to spaced points on a link of the first pair whereby to coordinate movement of said pairs, means operatively connecting the free ends of said first pair to said leg-rest, means operatively connecting the free ends of the second pair to one of the other members, a control link connecting intermediate points on one of said pairs to constrain movement of the free ends thereof to complete one of said four-bar linkages, the connecting means for the free ends of said one pair including a flexible coupling between a link of said one pair and the member to which it is connected, said flexible coupling providing relative movement between the completed end of said one four-bar linkage and the member to which it is operatively connected.

3. An improved leg-rest control arrangement according to claim 2 in which the free ends of the second pair are connected to the seat member.

4. An improved leg-rest control arrangement according to claim 2 in which said flexible coupling comprises a link connection.

5. An improved leg-rest control arrangement according to claim 2 in which said flexible coupling comprises a pin-and-slot connection.

6. An improved leg-rest control arrangement according to claim 2 in which the control link connects intermediate points on the second pair of links and the flexible coupling is between a link of said second pair and the seat member.

7. An improved leg-rest control arrangement according to claim 2 in which the control link connects intermediate points on the first pair of links and the flexible coupling is between a link of the first pair and the leg-rest member.

8. An improved leg-rest control arrangement according to claim 2 in which the control link connects intermediate points on the first pair of links, and the flexible coupling includes a pair of crossing interconnected links connected to the ends of the first pair of links, one of said crossing links being pivotally connected to the leg-rest, and an additional link connecting the other crossing link to the leg-rest.

9. An improved leg-rest control arrangement for use in a reclining chair having a support, a leg-rest, a body-supporting means including a seat and a back-rest, said seat and said back-rest being mounted on said support for inclining and reclining movement respectively, said control arrangement being connected between said body-supporting means, said support, and said leg-rest for coordinating said leg-rest for movement to an elevated, leg-supporting position in response to tilting movement of said body-supporting means from a sitting position into a tilted position, said leg-rest control arrangement including said leg-rest as one link member thereof and at least one of said seat and support as another link member thereof, said control arrangement including a pair of spaced control links, said first control link having a first control pivot, said second control link having a second control pivot, said first and second control pivots being adjacent each other, means operatively connecting said control pivots to one link member of said control arrangement, said connecting means comprising a pivotal connection between the first control link and said one link member at said first control pivot and a flexible coupling between the second control link and said one link member at said second control pivot, and means articulately connecting said pair of links to the other link member of said control arrangement and to each other to constrain said control pivots of said pair of control links relative to each other whereby a compound movement is imparted to said leg-rest, said compound movement being provided in part by the relative movement between the control pivots and said one link member produced by the action of said flexible coupling, and in part by the constrained movement of said control pivots relative to said other link member.

10. An improved leg-rest control arrangement for use in a reclining chair having a support, a leg-rest, a body supporting means including a seat and a back-rest, said seat and said back-rest being mounted on said support for inclining and reclining movement respectively, said

control arrangement being connected between said body-supporting means, said support and said leg-rest for coordinating said leg-rest for movement to an elevated, leg-supporting position in response to tilting movement of said body-supporting means from a sitting position into a tilted position, said leg-rest control arrangement including said leg-rest as a link member thereof and at least one of said seat and support as another link member thereof, said control arrangement including a pair of spaced control links, said control links having a pair of primary control pivots and a pair of secondary control pivots, means operatively connecting said primary control pivots to one link member of said control arrangement, said connecting means including a pivotal connection between the first control link and asid one link member and a flexible coupling between the second control link and said one link member, means in said control arrangement operatively connecting said secondary control pivots to the other link member and constraining one secondary control pivot relative to the other secondary control pivot, and means articulately connecting said pair of links to each other to constrain said primary control pivots relative to each other whereby a compound movement is imparted to said leg-rest, said

compound movement being provided in part by the relative movement between the primary control pivots and said one link member produced by the action of said flexible coupling, and in part by the constrained movement of said primary control pivots relative to the secondary control pivots.

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