

July 12, 1960

A. LORENZ

2,944,594

ARTICLE OF REPOSE FOR SUPPORTING THE BODY OF A PERSON

Filed Nov. 5, 1954

3 Sheets-Sheet 1

Fig. 1.

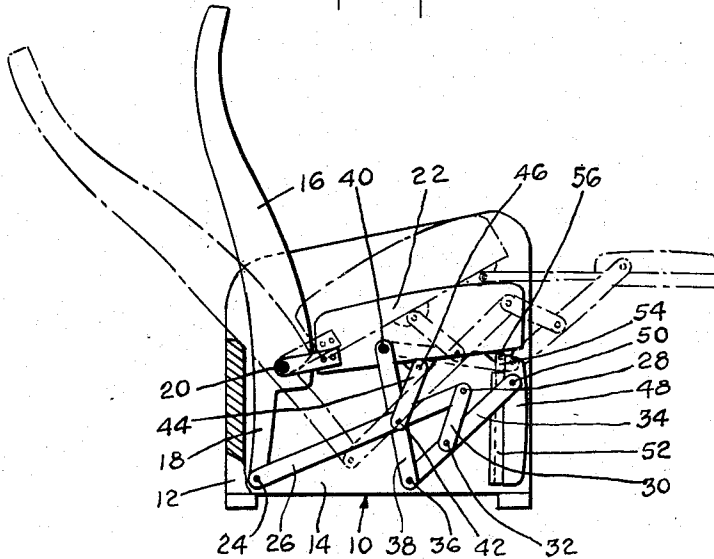
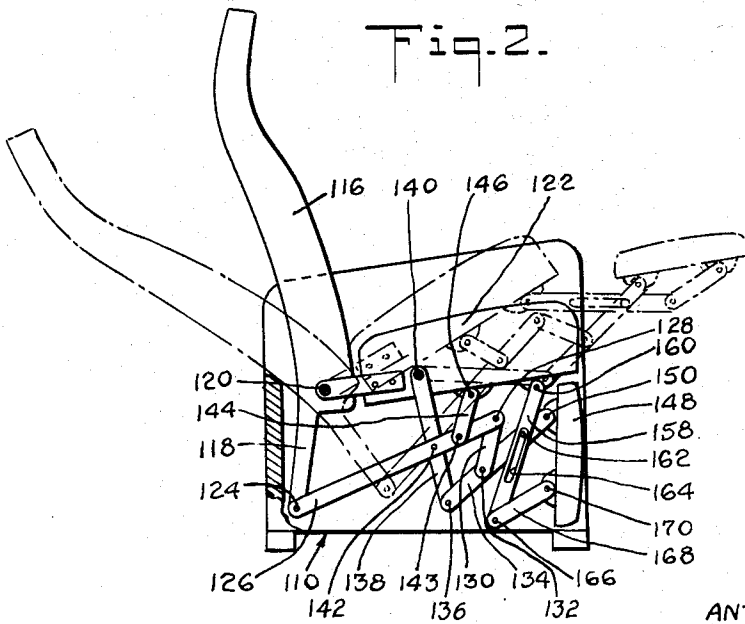


Fig. 2.



INVENTOR.
ANTON LORENZ

BY

Anton Lorenz

ATTORNEY.

July 12, 1960

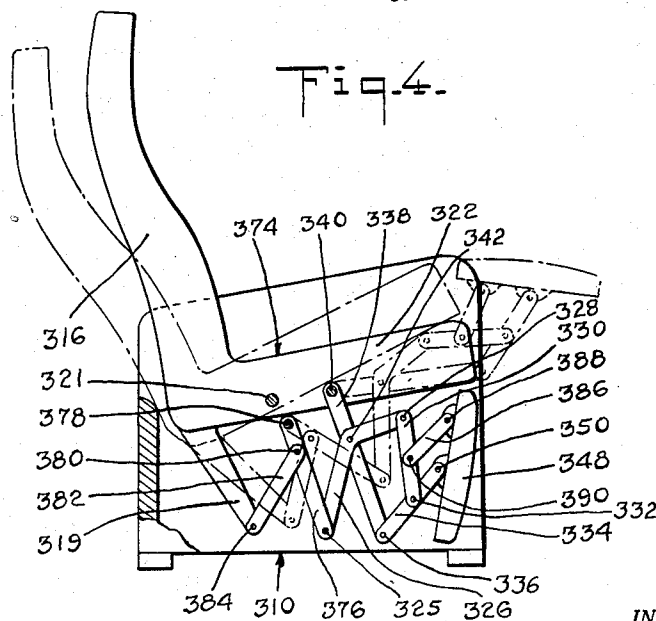
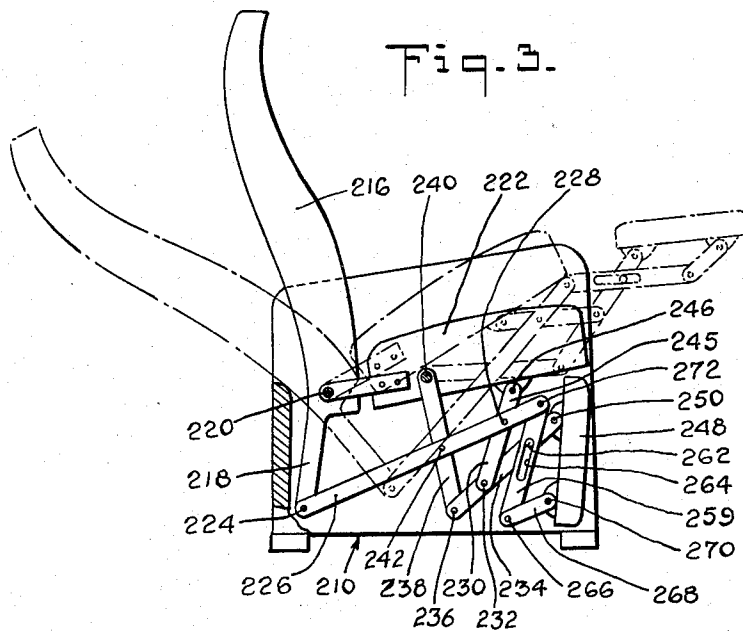
A. LORENZ

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3 Sheets-Sheet 2



INVENTOR.
ANTON LORENZ

BY

J. H. King

ATTORNEY.

July 12, 1960

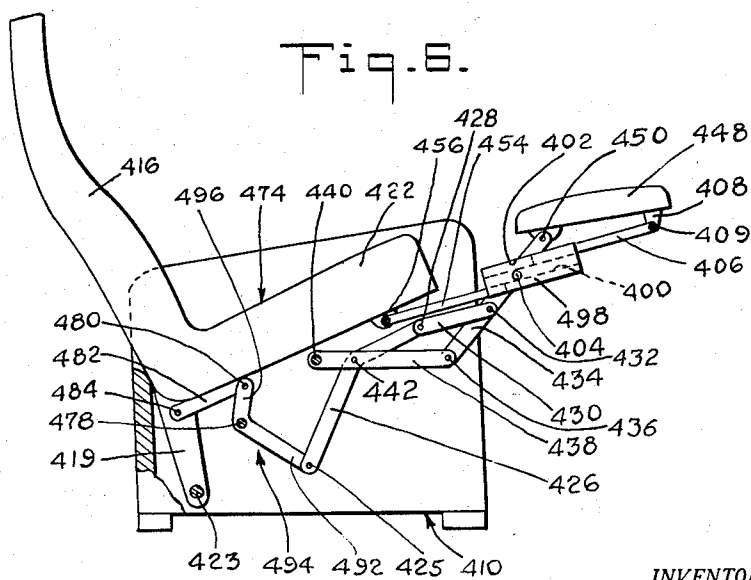
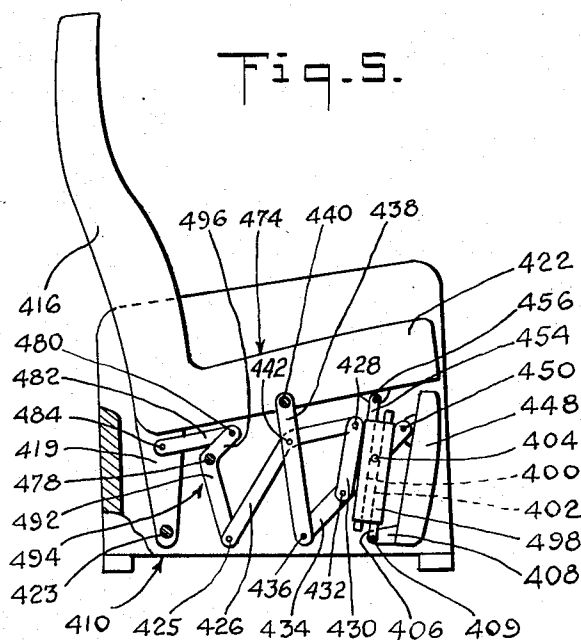
A. LORENZ

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3 Sheets-Sheet 3



INVENTOR.
ANTON LORENZ

BY

J. H. F. [Signature]

ATTORNEY.

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ARTICLE OF REPOSE FOR SUPPORTING THE BODY OF A PERSON

Anton Lorenz, Ocean Ridge, Boynton Beach, Fla.

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8 Claims. (Cl. 155—106)

This invention relates to improvements in articles of furniture and in particular to a reclining chair of the type having a pivotable seat and back-rest and a leg-rest supported by a leg-rest control linkage for coordinated movement in response to pivoting movement of the seat and back-rest.

According to the invention there is provided a reclining chair having a body-supporting structure including a seat and back-rest mounted on a fixed support frame for pivoting movement between an upright sitting position and a rearwardly-tilted reclining position, a leg-rest, and a leg-rest linkage of novel construction associated with the body supporting structure and the support frame and connected to the leg-rest for movement of the latter between a reclined position beneath the forward end of the seat and an extended position forwardly of and substantially at the level of the seat and spaced forwardly of the seat.

It is an object of the present invention to provide a reclining chair having an improved leg-rest control linkage so constructed as to space the leg-rest a relatively long distance from the front of the seat when the leg-rest is raised from its retracted position to its extended position.

Another object of the invention is the provision of a leg-rest control linkage of the character described in which the links thereof form a closed quadrilateral linkage structure connected at one end to the leg-rest and at the other end to the body-supporting structure, in such a manner that when the body-supporting unit is moved to its reclined position, the quadrilateral linkage is expanded in the direction of the leg-rest, thereby raising the leg-rest to its extended position and at the same time thrusting the leg-rest outwardly and forwardly, away from the front end of the seat.

A further object of the invention is the provision of a leg-rest control linkage of the character described in which slide means are provided, as a part of the leg-rest support and control structure, to cooperate with the quadrilateral linkage and permit the leg-rest to be extended well forwardly of the seat.

A further object of the invention is the provision of a leg-rest control linkage of the character described which provides well balanced and well controlled movement with a minimum of parts, and is thus effective and economical of manufacture.

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

Fig. 1 is a side elevational view of a reclining arm-chair according to the invention, a portion of a side wall being broken away;

Fig. 2 is a side elevational view of a different embodiment of a reclining chair according to the invention, a portion of a side wall being broken away;

Fig. 3 is a side elevational view of a further embodi-

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ment of a reclining chair according to the invention, a portion of a side wall being broken away.

Fig. 4 is a side elevational view of still another embodiment of a reclining chair according to the invention, a portion of a side wall being broken away.

Fig. 5 is a side elevational view of a further embodiment of a reclining chair according to the invention, a portion of a side wall being broken away; and

Fig. 6 is a side elevational view of the chair shown in Fig. 5, a portion of a side wall being broken away, said Fig. 6, however, illustrating the movable members of the chair in a reclined position.

Referring in detail to the drawings, and in particular to Fig. 1, there is shown a reclining chair which includes a support frame 10 having side walls 12 and 14 connected with each other in any suitable manner, as for example by cross braces. The reclining chair also has a body-supporting structure which includes a back-rest 16 having a downward extension 18 rigid therewith, and swingably mounted on the support 10 at pivot 20. The body-supporting structure also includes a seat 22 which is also swingably mounted on the support 10 at pivot 20 for pivoting movement independently of the back-rest 16.

A leg-rest 48 is pivotally mounted at the forward end of the seat 22 for pivoting movement between a retracted position, shown in full line in Fig. 1, beneath the forward end of the seat in the sitting position, and an extended position shown in broken line in Fig. 1, in which it is spaced forwardly of the front end of the seat 22 in the reclining position, and is substantially at the level of said seat. The leg-rest 48 is mounted on a rod 54 which is pivoted to the forward end of the seat at 56. The rod 54 extends slidably within a sleeve 52 fixed to the lower surface of the leg-rest 48. By virtue of the rod 54 and sleeve 52, the leg-rest 48 is not only pivotable upon the seat 22 about the pivot 56, but is also slidable outwardly away from the seat upon said rod 54.

Also included in the reclining chair of Fig. 1 is a leg-rest control linkage made in accordance with the present invention for moving the leg-rest between its retracted position and its extended position in coordinated response to movement of the body-supporting structure between its upright sitting position and rearwardly tilted reclining position. Said leg-rest control linkage includes a guiding link 38 pivotally mounted on the support 10 by a pivot 40 and carrying at its lower end a first link 34 which is pivoted at one end to the guiding link 38 at a pivot 36, and at its other end is pivotally connected to the leg-rest 48 at a pivot 50. The control linkage also includes a second link 26 pivotally connected at one end to the depending extension 18 of the back-rest 16 at a pivot 24, and pivotally connected at an intermediate point thereof to an intermediate point of the guiding link 38 at a pivot 42. A third link 30 extends between and connects the second link 26 and first link 34, the link 30 being pivotally connected at one end to the end of the second link 26 at a pivot 28, and being pivotally connected at its other end to an intermediate point on the first link 34 by a pivot 32.

The linkage structure also includes a seat control link 44 which is connected at one end to the lower portion of the seat 22 at a pivot 46, and at its other end is connected to the guiding link 38 and second link 26 by the aforementioned pivot 42. The swinging movement of the seat 22 about its pivot 20 is coordinated with the movement of the linkage by means of the link 44.

It will be observed that the guiding link 38 together with the links 26, 30 and 34 form a closed quadrilateral linkage structure which is bounded by the pivots 28, 32, 36 and 42. The top arm of the quadrilateral structure is formed by the forward portion of the second link 26; the bottom arm by the rear portion of the first link 34;

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the rear side portion by the bottom portion of the guiding link 38, and the forward portion by the third link 30.

It will be observed that the top arm of the quadrilateral linkage formed by the second link 26 is longer than the bottom arm formed by the first link 34, that is to say, the pivots 42 and 28 are spaced apart a greater distance than the pivots 36 and 32. The third link 30 is inclined rearwardly from its top end to its bottom end because of this difference in spacing between said pivots. In the retracted position of the leg-rest shown in full line in Fig. 1, the links 36 and 28 are spaced apart a substantial distance to permit the leg-rest 48 to be located beneath the seat.

The back-rest 16 is brought to its reclining position by rearward pressure of the user's back thereupon, causing the back-rest 16 to tilt rearwardly about its pivot 20 and thereby causing the back-rest extension 18 to pivot forwardly to the position shown in dotted line in Fig. 1. This pivoting movement of the back-rest extension 18 moves the second link 26 forwardly and upwardly, and through the connection of the second link 26 with the intermediate portion of the guiding link 38 at pivot 42, the lower end of the guiding link 38 is pivoted upwardly and forwardly to an even greater degree than the back-rest extension 18. The pivot 36 is thus moved upwardly and forwardly to a greater extent than the pivot 28, thereby bringing the pivot 36 and pivot 28 closer together and causing the quadrilateral linkage to expand in the direction of the leg-rest 48, as shown in broken line in Fig. 1. The rearwardly directed angle of the third link 30 is such that said link 30 must pivot in a downward and forward direction about the pivot 28. This downward and forward movement of the lower end of the third link 30 at the pivot 32 also tends to pivot the first link 34 downwardly and forwardly about its pivot 36. This could not be accomplished however, if the leg-rest 48 were connected at a fixed pivot to the seat. Thus, the rod 54 and sleeve 52 permit such movement of the third link 30 and consequently of the first link 34, the pivoting of the third link 30 thrusting the link 34 downwardly and outwardly at pivot 50 away from the forward end of the seat, and thus, at the end of the movement into the reclined position, the leg-rest 48 is located a substantial distance forwardly of the front end of the seat as shown in broken line in Fig. 1.

In the reclined position, the link 44 is raised and pivoted rearwardly about pivot 42 by the forward and upward movement of the second link 26, thus raising the seat to the reclining position shown in broken line in Fig. 1.

Fig. 2 shows a modified form of reclining chair which again includes a support frame 110 and a body supporting structure comprising a back-rest 116 having a depending extension 118 and a seat 122. Both the back-rest and seat are independently pivoted on the support at a common pivot point 120.

The chair also includes a leg-rest 148 and a leg-rest control linkage comprising a first link 134, a second link 126, a third link 130 and a guiding link 138. The guiding link 138 is pivotally mounted on the support 110 at a pivot 140. The second link 126 is connected at its rear end to the depending extension 118 of the back-rest 116 by a pivot 124. The second link 126 is connected to the guiding link 138 at a pivot 142 and to the third link 130 at a pivot 128. The other end of the third link 130 is connected to the first link 134 at a pivot 132. The link 134 is connected to the guiding link at a pivot 136. The forward end of the first link 134 is connected to the leg-rest at a pivot 150.

A bar 158 is swingably mounted on the forward end of the seat 122 at pivot 160 and at its lower end carries a link 168 which is pivoted thereto at 166 and is also pivoted to the leg-rest 148 at pivot 170, the pivot 170 being spaced from the other leg-rest pivot 150. The

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bar 158 is operatively connected with the first link 134 by a pin-and-slot connection 162, 164, the pin 162 being affixed to an intermediate portion of the first link 134 and the slot 164 being contained centrally in bar 158.

A seat control link 144 is connected at its top end by pivot 146 to the seat 122, and at its bottom end is connected by a pivot 143 to an intermediate portion of the second link 126, in such a manner that when the leg-rest linkage is propelled forwardly and upwardly by movement of the back-rest 116, the seat control link 144 urges the seat 122 upwardly to its reclined position shown in broken line in Fig. 2.

Again it will be observed that the links 126, 138, 130 and 134 form a closed quadrilateral linkage structure bounded by the pivots 128, 132, 136 and 142. As was previously described in connection with the embodiment of Fig. 1, rearward pivoting movement of the back-rest 116 to its reclined position causes the pivots 128 and 136 to move toward each other and the pivots 132 and 142 to move away from each other, the quadrilateral linkage is therefore expanding in the direction of the leg-rest 148. This expansion of the quadrilateral linkage causes the third link 130 to pivot forwardly and downwardly due to the greater spacing of the pivots 128 and 142 than the pivots 132 and 136. The third link 130 therefore moves the first link 134 forwardly and downwardly and effects a movement of the leg-rest 148 outwardly away from the front of the seat. This forward thrust of the leg-rest 148 is permitted by the pin-and-slot connection 162, 164, the pin 162 on first link 134 moving from the upper or rearward end of the slot 164 to the front or opposite end of said slot. Thus, the closed quadrilateral linkage cooperates with the slide means to extend the leg-rest outwardly of the seat.

An alternate embodiment of the reclining chair is shown in Fig. 3, the chair again including a support frame 210 upon which is mounted a body supporting structure including a seat 222 and a back-rest 216 having a depending extension 218. The seat 222 and back-rest 216 are both mounted by a common pivot 220 on the support frame 210.

The leg-rest 248 is carried by a leg-rest control linkage which includes a first link 234, a second link 226, a third link 230 and a guiding link 238. The guiding link 238 of the linkage is again pivoted to the support 210 at pivot 240. The second link 226 is pivoted at one end to the back-rest extension 218 at a pivot 224 and is also pivoted to the guiding link at pivot 242 and to the third link 230 at pivot 228. The first link 234 is pivoted to the end of the guiding link 238 at pivot 236 and at its other end is pivoted to the leg-rest at pivot 250. The third link 230 is pivoted at its bottom end to an intermediate portion of the first link 234 at pivot 232. At its upper end the third link 230 has an integral extension 245 which extends past the second link 226 and is connected to the seat at pivot 246.

The second link 226 extends past its pivotal connection with the third link 230 and at its front end is connected by a pivot 272 to a bar 259 which at its lower end carries a link 268 connected thereto by pivot 266. The other end of the link 268 is connected to the leg-rest 248 at pivot point 270 which pivot point is spaced from the other leg-rest pivot 250.

Again, the links 226, 238, 234 and 230 form a closed quadrilateral linkage which is bounded by the pivots 228, 232, 236 and 242. The upper arm of the quadrilateral linkage which is formed by that portion of the second link 226 between the pivots 228 and 242 is longer than the lower arm of the quadrilateral linkage which is formed by the first link 234 between the pivots 232 and 236. Thus, the third link 230 is inclined rearwardly from its top to its bottom end and is thus positioned to pivot downwardly and outwardly to carry the first link 234 in the same direction when the quadrilateral linkage is extended, as was previously described, by rearward pivoting

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movement of the back-rest 216. The leg-rest 242 is thus thrust outwardly of the seat 222 when the leg-rest is lifted to its extended position shown in broken line in Fig. 3.

It will be observed that in this instance, the upper portion 245 of the third link 230 acts as the seat control link to raise the seat 222 to its reclining position in response to rearward tilting movement of the back-rest 216.

The bar 259 contains a slot 264 which cooperates with a pin 262 affixed to an intermediate portion of the first link 234 between the pivots 232 and 250. This pin-and-slot connection 262 and 264 operates in the same fashion as has been previously described in connection with Fig. 2, to cooperate with the quadrilateral linkage, permitting the leg-rest 248 to be brought to its extended position.

Another embodiment of the reclining chair is shown in Fig. 4. A seat and back-rest unit designated generally as 374 and comprising a rigid seat 322 and back-rest 316 is pivotally mounted on the support frame 310 by a pivot 321. The back-rest 316 has a depending extension 319 which is located rearwardly of the pivot point 321. The leg-rest control linkage includes a guiding link 338 pivotally mounted at 240 on the support frame 310, a first link 334, a second link 326 and a third link 330. The aforementioned links form a closed quadrilateral linkage arrangement which is bounded by the pivots 328, 332, 336 and 342 which interconnect said links. The first link 334 is pivotally connected to the leg-rest at a pivot point 350, while an additional link 386 is pivotally connected at a spaced point 388 on said leg-rest and to an intermediate point on the third link 330 by a pivot 390.

The rear end of the second link 326 of said linkage is pivoted at 325 to the lower end of an arm 376, the upper end of which is pivoted to the support 310 at a pivot 378. The arm 376 is connected to the lower portion of the back-rest extension 319 by a link 382, one end of which is pivoted to the upper portion of the arm 376 at 380, and the other end of which is pivoted at 384 to the extension 319.

When the seat and back-rest unit 374 is pivoted rearwardly upon pivot 321 to its reclining position shown in broken line in Fig. 4, the quadrilateral linkage is again caused to expand bringing the pivots 328 and 336 closer to each other and causing the pivots 342 and 332 to be further spaced apart. The quadrilateral linkage is thus expanded in the direction of the leg-rest and the link 330 is pivoted forwardly, thus thrusting the leg-rest 348 outwardly of the seat 322.

A further modified form of the invention is shown in Figs. 5 and 6, again the reclining chair having a seat and back-rest unit 474 in which the seat 422 is rigid with the back-rest 416, and the back-rest has a depending extension 419. In this instance, the lower end of the extension 419 is pivoted to the support frame 410 at a pivot point 423.

The leg-rest 448 is actuated in the manner previously described by a leg-rest linkage which includes a guiding link 438 pivoted at its top end to the support frame 410 at 440, and pivoted at its bottom end to the first link 434 at 436. The opposite end of the first link 434 is pivoted at 450 to the leg-rest 448. The second link 426 crosses the guiding link 438 and is pivoted to said guiding link at its crossing-over point at a pivot 442. The end of the second link 426 carries the third link 430 and is pivoted thereto by a pivot 428. The other end of the third link 430 is pivoted to an intermediate portion of the first link 434 by a pivot 432.

The rear end of the second link 426 is pivoted at 425 to the bottom arm 492 of a bell crank lever 494. The bell crank lever 494 is pivotally mounted at 478 on the support frame 410, and its top arm 496 is pivoted at 480 to one end of a link 482, the other end of which is pivoted at 484 to the depending extension 419 of the seat and back-rest unit 474.

In this embodiment, the slide means for extending the

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leg-rest outwardly of the seat comprises a sleeve 498 having two parallel bores 400 and 402, and pivoted to the first link 434 at pivot point 404. A rod 454 is swingably mounted on the seat 422 at pivot 456 and extends slidably within the bore 400 of the sleeve 498. A second rod 406 is pivoted at 409 to a lug 408 which is affixed to the leg-rest 448, and is slidably engaged with the bore 402 of the sleeve 498.

The links 426, 430, 434 and 438 again form a closed quadrilateral linkage bounded by the pivots 428, 432, 436 and 442. Again, the top arm of the quadrilateral linkage formed by the portion of the second link 426 between the pivot points 442 and 428 is longer than the bottom arm formed by that portion of first link 434 between the pivots 436 and 432, and the third link 430 is rearwardly inclined. When the user leans rearwardly upon the seat and back-rest unit 474, the unit pivots rearwardly about pivot 423, causing the link 482 to pull rearwardly upon the top arm 496 of the bell crank lever 494 and pivoting the lower arm 492 forwardly and upwardly. Such pivoting movement of the bell crank lever 494 urges the second link 426 at pivot 425 forwardly and upwardly and causes the quadrilateral linkage to expand in the direction of the leg-rest 448, the links 428 and 436 being drawn together as shown in Fig. 6, and the links 432 and 442 being further separated. The link 430 pivots about the pivot 428 so that its lower end moves through a downward and forward arc and draws the first link 434 forwardly and downwardly in a direction to move the leg-rest 448 outwardly from the front of the seat 422 as the leg-rest is brought to its extended position of Fig. 6. This outward thrust of the leg-rest 448 is permitted by the sliding movement of the rods 454 and 406 in the respective sleeve bores 400 and 402.

Each of the embodiments shown in the drawings may be equipped with limiting means for limiting the sitting position and the reclined position of the movable members of the chair. Such limiting means is conventional and well known, and is not illustrated herein for convenience.

Furthermore, each of the embodiments shown in the drawings may be equipped with conventional locking means for holding the movable members of the chair in any desired position.

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

What I claim is:

1. In a reclining chair having a support frame, a body-supporting structure including a seat and back-rest pivotally mounted on the support frame for movement between an upright sitting position and a rearwardly-tilted position, and a leg-rest; a leg-rest linkage coupled to the body-supporting structure for actuation thereby, the leg-rest being carried by said leg-rest linkage for movement from a retracted position beneath the seat to an extended position forwardly of and substantially at the level of said seat in response to rearward tilting movement of the body-supporting structure, said leg-rest linkage including a guiding link pivotally mounted on the support, a first link pivotally connected to the leg-rest, a second link operatively connected to said body-supporting structure, and a third link, said links being pivotally interconnected to form a closed quadrilateral linkage, the upper arm of which is formed by a portion of the second link, the lower arm of which is formed by a portion of the first link, and the side arms of which are formed by portions of the guiding and third links, said upper arm being longer than the lower arm and the third link being inclined from its top to bottom toward said guiding link in the upright sitting position of the body-supporting structure, whereby said third link turns said first link forwardly and downwardly and said first link carries said leg-rest in a direction

away from the front end of the seat as the leg-rest is raised to its extended position.

2. A reclining chair according to claim 1 which also includes slide means connecting said leg-rest to a movable portion of said chair, said slide means being positioned to guide the leg-rest away from the seat when the leg-rest is propelled outwardly and forwardly of the seat by action of the third link upon said first link.

3. In a reclining chair having a support frame, a body-supporting structure including a seat and a back-rest pivotally mounted on the support frame for movement between an upright sitting position and a rearwardly-tilted position, and a leg-rest; a leg-rest linkage operatively coupled to the body-supporting structure for actuation thereby, said leg-rest being pivotally mounted on said leg-rest linkage for movement from a retracted position beneath the seat to an extended position forwardly of and substantially at the level of said seat in response to rearward tilting movement of the body-supporting structure, said leg-rest linkage including a guiding link pivotally mounted on the support, a first link pivotally connected to and carrying the leg-rest, a second link operatively connected to said body-supporting structure, and a third link, said links being pivotally interconnected to form a closed quadrilateral linkage having an upper arm formed by a portion of the second link, a lower arm formed by a portion of the first link, a rear arm formed by a portion of the guiding link, and a front arm formed by said third link, said upper arm being longer than the lower arm and the front arm being inclined in a rearward and downward direction in the upright sitting position of the body-supporting structure for forward and downward pivoting movement when the body-supporting structure is tilted rearwardly whereby to urge the first link and the leg-rest carried thereby in a direction to propel the leg-rest outwardly and forwardly of the seat as the leg-rest is raised to its extended position.

4. In a reclining chair having a support frame, a body-supporting structure including a seat and back-rest pivotally mounted on the support frame for movement between an upright sitting position and a rearwardly-tilted position, and a leg-rest; a leg-rest linkage connecting the body-supporting structure to the leg-rest for movement of the latter from a retracted position beneath the seat to an extended position forwardly of and substantially at the level of said seat in response to rearward tilting movement of the body-supporting structure, said leg-rest linkage including a guiding link pivotally mounted on the support, a first link pivotally connected to the leg-rest and to said guiding link, a second link operatively connected to said body-supporting structure and to an intermediate point on said guiding link, and a third link connecting said first and second links, said links being pivotally interconnected to form a closed quadrilateral linkage, the upper arm of which is formed by a portion of the second link, the lower arm of which is formed by a portion of the first link, and the side arms of which are formed by portions of the guiding link and third link respectively, said upper arm being longer than the lower arm and the third link in the upright sitting position of the body-supporting structure being inclined in a direction to urge the first link in a direction to move the leg-rest outwardly away from the forward end of the seat when the leg-rest is raised to its extended position, and slide means cooperating with said quadrilateral linkage for guiding said leg-rest away from said seat in coordination with movement of said first link.

5. In a reclining chair having a support frame, a body-supporting structure including a seat and a back-rest pivotally mounted on the support frame for movement between an upright sitting position and a rearwardly-tilted position, and a leg-rest; a leg-rest linkage connecting the body-supporting structure to the leg-rest for move-

ment of the latter from a retracted position beneath the seat to an extended position forwardly of and substantially at the level of said seat in response to rearward tilting movement of the body-supporting structure, said leg-rest linkage including a guiding link pivotally mounted on the support and depending therefrom, a first link pivotally connected at one end to the leg-rest and at its other end to the lower end of the guiding link by a first pivot, a second link operatively connected at its rear end to said body-supporting structure for movement therewith and connected at an intermediate point to an intermediate point on the guiding link by a second pivot, a third link connected at one end to the front end of the second link by a third pivot and connected at its other end to an intermediate point on the first link by a fourth pivot; said interconnected links forming a closed quadrilateral linkage having an upper arm formed by that portion of the second link between the second and third pivots, a lower arm formed by that portion of the first link between the first and fourth pivots, a rear arm formed by that portion of the guiding link between the first and second pivots, and a front arm formed by that portion of the third link between the third and fourth pivots, the upper arm being of greater length than the lower arm and the third link being inclined rearwardly as it extends downwardly from the third pivot in the upright sitting position of the body-supporting structure to the fourth pivot, whereby upon forward movement of the second link with the body-supporting means, the third link is pivoted in a direction to move the fourth pivot forwardly and downwardly, increasing the angle between the first link and the guiding link at the first pivot, and moving the first link in a direction to carry the leg-rest away from the forward end of the seat.

6. A reclining chair according to claim 5 which also includes slide means supporting the leg-rest at a point spaced from its pivotal connection with the first link, said slide means being extensible as said leg-rest is raised to guide the leg-rest away from said seat as said leg-rest is carried away from said seat by said first link.

7. A reclining chair according to claim 6 in which the slide means comprises a telescopic leg-rest support member pivotally mounted on the seat and connected to said leg-rest.

8. A reclining chair comprising a support, a body-supporting structure including a seat and a back-rest mounted on said support for rearward tilting movement, a leg-rest, a leg-rest control linkage carrying said leg-rest and adapted to guide said leg-rest in a selected path between a retracted position beneath the seat and an extended position forwardly of the seat, and a constrained linkage for actuating said leg-rest control linkage in response to tilting movement of said body-supporting structure, said constrained linkage including as movable links an arm and a guiding link pivotally mounted at spaced points on the support and a connecting link pivotally connected at spaced points to said arm and guiding link, said constrained linkage also including as a stationary link that portion of the support between the pivotal mounts of said arm and guiding link thereon, said arm being operatively coupled to the body-supporting structure for movement of the constrained linkage in response to tilting movement of the body-supporting structure, said leg-rest control linkage including a portion of said guiding link, a portion of said connecting link, a leg-rest link pivotally connected at one end to said guiding link and at its other end pivotally connected to and carrying the leg-rest, and a control link connected at one end to said leg-rest link and at the other end to said connecting link, said guiding link, connecting link, leg-rest link and control link forming a closed quadrilateral linkage, the upper arm of which is formed by a portion of the connecting link and the lower arm of which is formed by a portion of the leg-rest link, said upper arm being longer than the lower

arm and the control link in the retracted position of the leg-rest being inclined in a direction to urge the end of the leg-rest link which is pivoted to the leg-rest forwardly and downwardly upon actuation of the control linkage by the constrained linkage, whereby the leg-rest is propelled away from the forward end of the seat, said control means also including slide means remote from said quadrilateral linkage and connecting said leg-rest to a movable element of said chair.

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