

June 2, 1959

F. F. SCHLIEPHACKE

2,888,978

LEG-REST AND CONTROL ARRANGEMENT FOR CHAIR

Filed March 22, 1957

5 Sheets-Sheet 1

FIG. 1

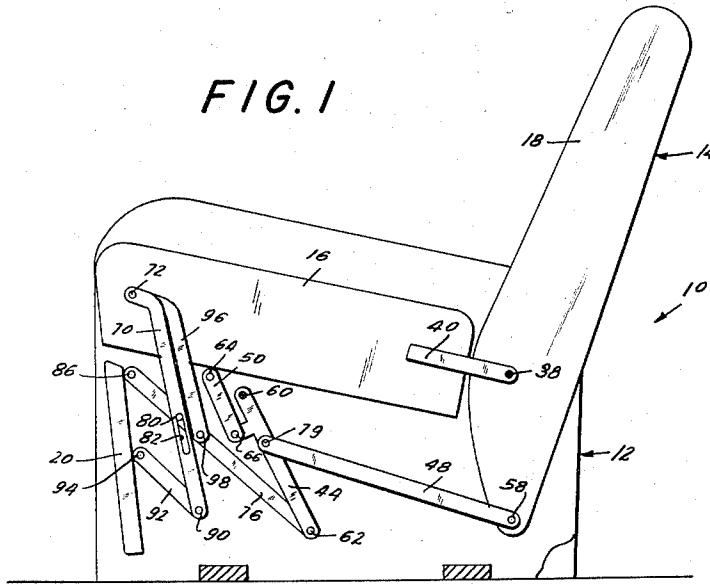


FIG. 2

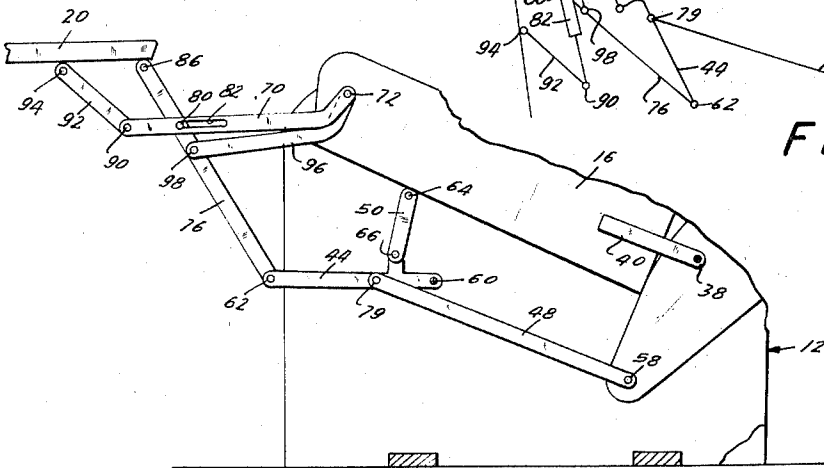
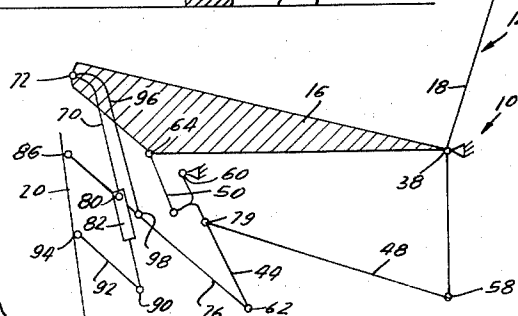


FIG. 3



INVENTOR.
FRIDTJOF F. SCHLIEPHACKE

BY
Amster & Levy
ATTORNEY

June 2, 1959

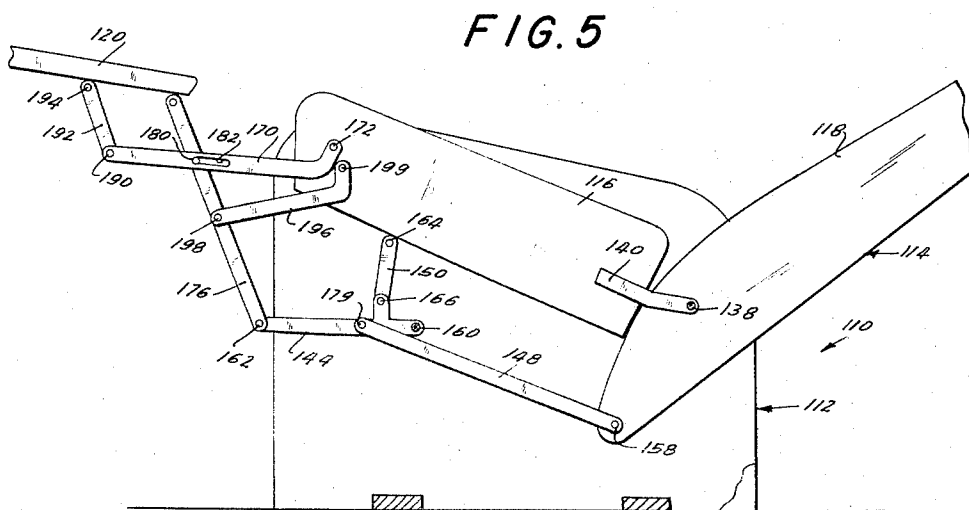
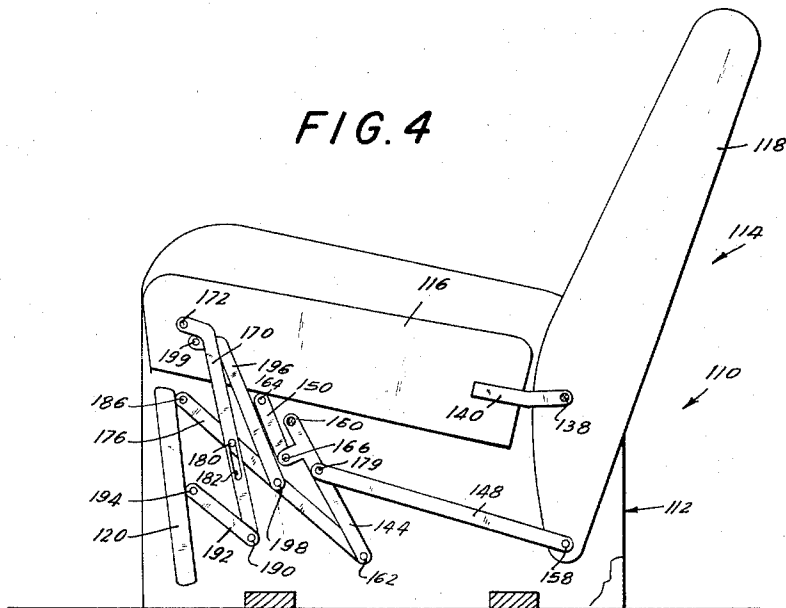
F. F. SCHLIEPHACKE

2,888,978

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5 Sheets-Sheet 2



INVENTOR.
FRIDTJOF F. SCHLIEPHACKE

BY

Ameter & Leary
ATTORNEY

June 2, 1959

F. F. SCHLIEPHACKE

2,888,978

LEG-REST AND CONTROL ARRANGEMENT FOR CHAIR

Filed March 22, 1957

5 Sheets-Sheet 3

FIG. 6

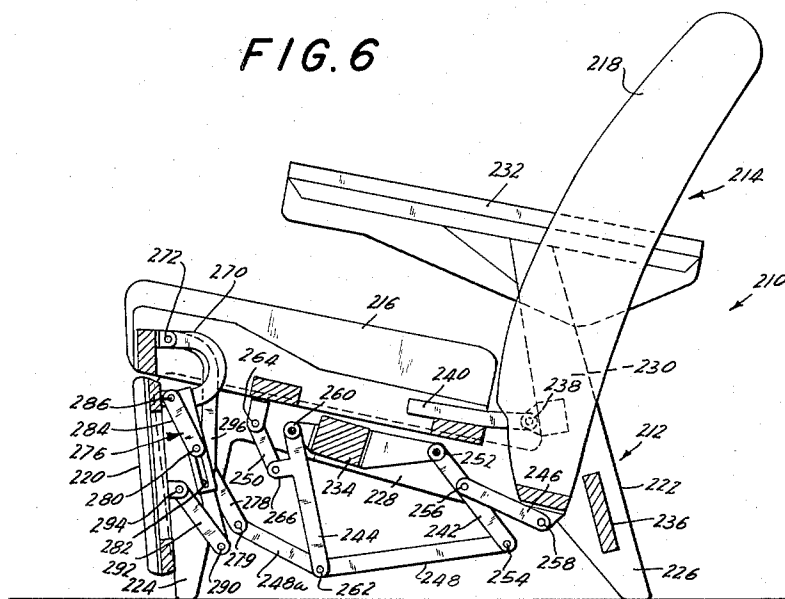
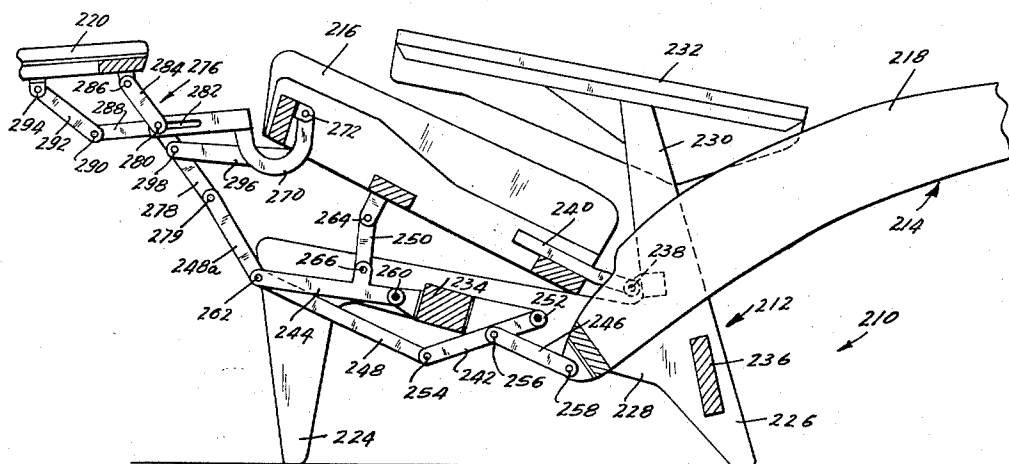


FIG. 7



INVENTOR.
FRIDTJOF F. SCHLIEPHACKE

BY
Amater & Levy
ATTORNEY

2,888,978

5 Sheets-Sheet 4

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BY *Amater & Levy*
ATTORNEY

June 2, 1959

F. F. SCHLIEPHACKE

2,888,978

LEG-REST AND CONTROL ARRANGEMENT FOR CHAIR

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5 Sheets-Sheet 5

FIG. 10

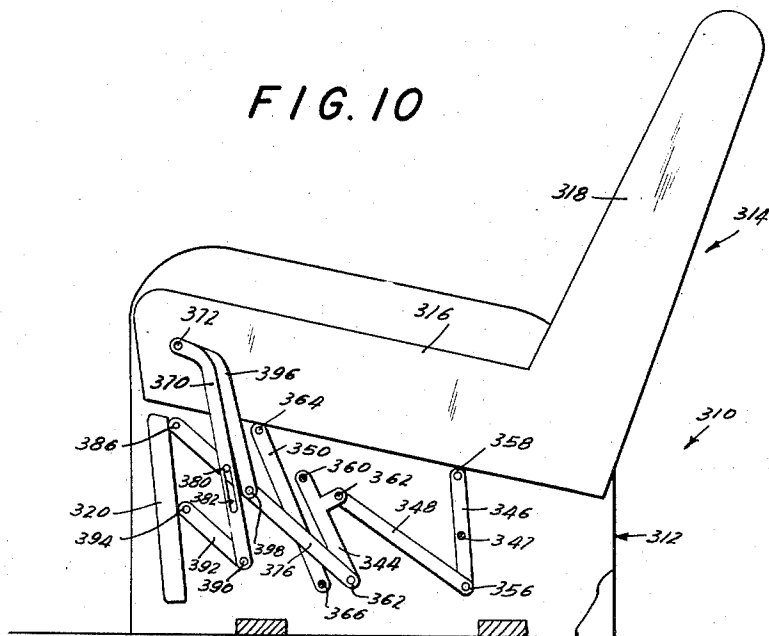
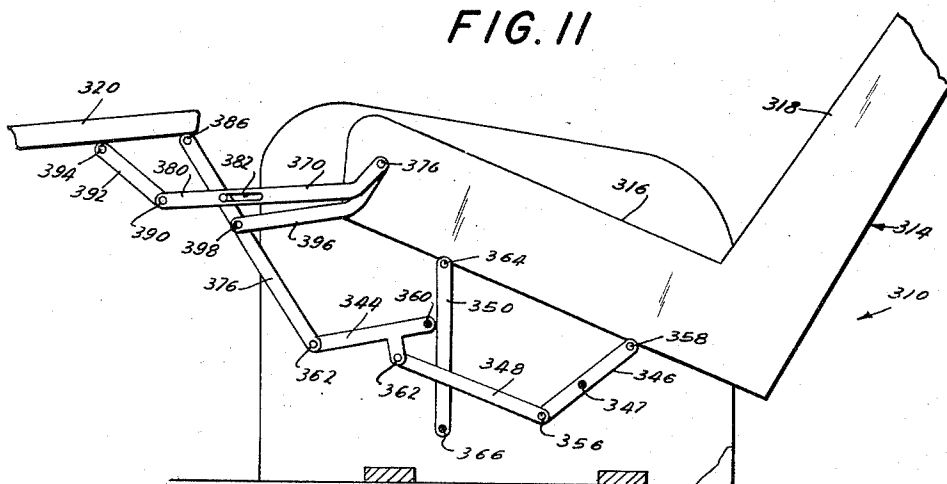


FIG. 11



INVENTOR.

FRITJOFF F. SCHLIEPHACKE

BY

Amster & Levy
ATTORNEY

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2,888,978

LEG-REST AND CONTROL ARRANGEMENT FOR CHAIR

Fridtjof F. Schliephacke, Berlin-Schmargendorf, Germany, assignor to Anton Lorenz, Boynton Beach, Fla.

Application March 22, 1957, Serial No. 647,391

10 Claims. (Cl. 155-106)

The present invention relates to articles of furniture, and in particular to an improved leg-rest and control arrangement for the type of a chair including a support and body supporting means having a seat and a back-rest rockably mounted on the support.

It is known to construct a chair including a seat and back-rest rockably mounted on a support and a leg-rest disposed adjacent the forward end of the seat with provisions for coordinating movement of the seat and leg-rest to movement of the back-rest. Accordingly when a person, seated in the chair, leans back to displace the back-rest from its normal position to a reclining position, both the seat and the leg-rest are moved to appropriate inclined and extended positions respectively to comfortably accommodate the person in a reclined or partially reclined position.

Broadly, it is an object of the present invention to provide an improved leg-rest and control arrangement for a chair of the aforesaid general construction. Specifically, it is within the contemplation of the present invention to provide an improved linkage control coordinated to movement of the back-rest of the chair which is effective to move the leg-rest upwardly and outwardly in relation to the seat of the chair in response to the reclining movement of the back-rest.

In accordance with an illustrative embodiment demonstrating features of the present invention, the improved leg-rest and control arrangement comprises a leg-rest disposed adjacent the forward end of the seat of the chair, a pivotally mounted arm, a first controlling link crossing the pivotally mounted arm and having both a pivotal and slidable connection to said arm, and a second pivotally mounted controlling link, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of the pivotal and slidable connection. The spacing between the pivotal mount for the second controlling link and its pivotal connection to the first controlling link is greater than the spacing between the pivotal mount for the arm and its pivotal and slidable connection to the first controlling link whereby the second controlling link describes a greater arc than the first arm which in turn is effective to turn the leg-rest both upwardly and outwardly in relation to the forward end of the seat. Coordination of the improved foot-rest linkage to the back-rest and the seat is achieved by a further linkage means of known construction.

The above brief description as well as further objects and advantages of the invention will best be appreciated by reference to the following detailed description of a number of preferred embodiments, when taken in conjunction with the accompanying drawings wherein:

Fig. 1 is a side elevational view of a first embodiment of reclining chair demonstrating features of the present invention, with a portion of one side wall broken away to disclose the details of the operating mechanism at the one side of the chair;

Fig. 2 is a side elevational view, with portions broken

2

away, illustrating the chair in Fig. 1 and showing the coordinated position of the seat and leg-rest when the back-rest is in the reclining position;

Fig. 3 is a diagrammatic showing of the linkages employed at each side of the chair in Fig. 1 for coordinating the movement of the seat and the leg-rest to the back-rest;

Fig. 4 is a side elevational view, with parts broken away, illustrating a further embodiment of reclining chair demonstrating features of the present invention;

Fig. 5 is a side elevational view of the chair illustrated in Fig. 4, but showing the coordinated position of the seat and leg-rest when the back-rest is in the reclined position;

Fig. 6 is a side elevational view of a further reclining chair demonstrating features of the present invention, portions of the side wall of the chair being broken away and sectioned for clarity;

Fig. 7 is a side elevational view of the reclining arm chair illustrated in Fig. 6, but showing the back-rest, the seat and the leg-rest in their respective position when the back-rest is moved to the reclined position;

Fig. 8 is an enlarged fragmentary elevational view of the front end of the seat, illustrating the details of the linkage means at each side of the seat which are connected between the seat and the leg-rest;

Fig. 9 is a perspective view, partially exploded and with parts removed, showing the details of the linkage arrangement connecting the leg-rest to the seat;

Fig. 10 is a side elevational view of a still further embodiment of reclining chair demonstrating features of the present invention, portions of the rear side wall of the chair being broken away for clarity; and,

Fig. 11 is a side elevational view of the reclining arm chair illustrated in Fig. 10, showing the rigid unit of the seat and back-rest in the reclined position with the leg-rest in the extended and elevated position.

Referring now specifically to Figs. 1 to 3 inclusive, there is shown a first embodiment of the invention which, except for the improved leg-rest arrangement, is subject to a latitude of variation and change. Specifically, it will be seen that in Fig. 1 the chair 10 has a frame 12, body-supporting means 14 having a seat 16 and a back-rest 18, and a leg-rest 20 disposed adjacent and beneath the forward end of the seat 16 and mounted for coordinated movement with the back-rest 18. In this illustrative form of invention, identical linkage arrangements are employed at each side of the chair for coordinating movement of the seat 16 and the leg-rest 20 to the back-rest. Accordingly, it will suffice to describe the details of the linkage mechanism at the adjacent side of the chair, which adjacent side has been exposed by removal of portions of the support or frame 12.

The back-rest 18 of the body-supporting means 14 is rockably mounted on the support 12 at the pivot 38. The seat 16 is mounted on the same pivot by means of a pair of rearwardly projecting bars 40 which are fixed to the seat 16 and pivotally mount the seat 16 on the support 12 at the pivot 38. The illustrative rockable mount for the seat 16 and the back-rest 18 on the support is coaxial, but the respective pivotal connection for the seat and the back-rest on the support could be spaced from each other.

An appropriate linkage arrangement is interconnected between the reclinable back-rest 18 and the seat 16 to transmit the movement of the back-rest 18 to the seat 16, whereby in response to reclining movement of the back-rest, the seat is displaced to the inclined position illustrated in Fig. 2. This linkage arrangement includes a guiding link 44 and first and second connecting links 48, 50. The guiding link 44 has a pivotal connection 60 at its upper end to the support 12. Intermediate its ends,

the guiding link 44 has a pivotal connection 79 to one end of the connecting link 48, the other end of said connecting link having a pivotal connection 58 to the lower end of the back-rest 18 at a point spaced below the pivot 38 of the body-supporting means 14 on the support 12. The seat connecting link 50 has its upper end pivotally connected to the seat 16 at the pivot 64 and has its lower end pivotally connected to a lateral extension of the guiding link 44 at the pivot 66. The extension is integral with the guiding link 44 at a point spaced above the pivotal connection 79. The described linkage arrangement is effective to transmit the reclining movement of the back-rest 18 into coordinated rocking movement of the seat 16 about the pivot 38. This coordinated movement may be appreciated by progressively inspecting the relative positions of the seat and back-rest in Figs. 1 and 2.

In accordance with the present invention, the improved leg-rest control arrangement embodies an arm 70 disposed adjacent to the forward end of the seat and having its upper hooked end pivotally mounted on the seat 16 at the pivotal connection 72.

Extending across the arm 70 is a first controlling link 76 which is connected at its rearward end to the guiding link 44 and at its forward end to the leg-rest 20. At a location intermediate its ends, the first controlling link 76 has a pivotal and slidable connection to the arm 70. The pivotal connection at the rearward end of the first controlling link to the guiding link 44 has been designated by the reference numeral 62; the pivotal connection at the forward end of the first controlling link to the leg-rest 20 has been designated by the reference numeral 86; and the pivotal and slidable connection between the first controlling link 76 and the arm 70 includes the pin 80 on the link 76 and the elongated slot 82 formed in the arm 70.

Intermediate the lower end of the arm 70 and the leg-rest 20 is a further connecting link 92 which has a pivotal connection 94 at its forward end to the leg-rest 20 at a location spaced below the pivotal connection 86 and a pivotal connection 90 at its rearward end to the arm 70.

As may be appreciated by progressively inspecting Figs. 1 and 2, the pin 80 of the pin and slot connection moves between the upper end of the slot 82 (Fig. 1) and the lower end of the slot 82 (Fig. 2) when the leg-rest 20 is extended in relation to the seat 16 in response to reclining movement of the back-rest 18. In order to effectively guide the pin 80 in its limited travel in the slot 82, a second controlling link 96 is operatively connected to the first controlling link 76. The second controlling link 96 has a pivotal connection 98 at its lower end to the first controlling link 76 at a location spaced rearwardly relative to the pivotal and slidable connection between the first controlling link 76 and the arm 70. The second controlling link 96 is mounted coaxially with the arm 70 on the pivot 72 in this illustrative form of the invention. The spacing between the pivotal connection 72 of the second controlling link 96 on the seat and its pivotal connection 98 to the first controlling link 76 is greater than the spacing between the pivotal connection 72 of the arm 70 on the seat 16 and the pivotal and slidable connection 80, 82 between the arm 70 and the first controlling link 76, the pin 80 being at the upper end of the slot 82 as shown in Fig. 1. Thus, in response to reclining movement of the back-rest, the second controlling link 96 will traverse a greater arc than that traversed by the arm 70 whereby the leg-rest 20 is translated both outwardly and upwardly in response to the drive imparted to the first controlling link via the guiding link 44 and the connecting link 48. The function of the second controlling link is to guide the pin 80 in the slot 82 of the first controlling link 76 so that the pin 80 is urged downwardly toward the lower end of the slot (Fig. 2) in response to movement of the back-rest into the reclined position to provide an effectively longer support for the legs of the person using the chair.

The purpose of the present improved linkage arrange-

ment may be more fully appreciated by considering typical but nonetheless illustrative dimensions of a chair. The average seat length is approximately 21" and the average leg-rest length is approximately 10". Thus the overall dimension for supporting the portion of the person's torso from the hip pivot to the feet is approximately 31". However, experience indicates that this dimension should be of the order of 38", and that a 40" support is optimum. By the linkage arrangement described whereby the leg-rest 20 is transmitted outwardly as well as forwardly relative to the seat, and with the slot 82 approximately 2" in length, it is possible to exceed the minimum permissible dimension and to arrive at optimum conditions. In this connection the overall height or width of the leg-rest cannot exceed 10" for the seat level should be at approximately 17"; and 7" are required for the depth of the seat and for clearance between the lower end of the leg-rest and the floor support.

In Figs. 4 and 5 there is illustrated a modification of the chair of Figs. 1 to 3 which is substantially identical to the embodiment illustrated in Figs. 1 to 3 inclusive. Accordingly, the corresponding parts have been designated by the same reference numerals as employed in Figs. 1 to 3 inclusive, but as part of a "100" series. In lieu of coaxially pivoting the arm 170 and the second controlling link 196 at the pivotal connection 172 to the seat 116, in this embodiment the second controlling link 196 has a separate pivotal connection 199 which is spaced from and disposed rearwardly and below the pivotal connection 172. However, the spacing between the pivots 199, 198 is still greater than the spacing between the pivot 172 and the pin 180 of the pin and slot connection between the arm 170 and the first controlling link 176 (when the pin is in the position of Fig. 4) whereby the prescribed forward translation of the leg-rest 120 is achieved in response to the reclining movement of the back-rest 118.

Referring now specifically to Figs. 6 to 9 inclusive, there is shown a still further embodiment of the invention which is identified by similar part numbers as part of a "200" series. Specifically, and as seen best in Figs. 6 and 7, the chair 210 comprises a support or frame 212, body-supporting means 214 including a seat 216 and a back-rest 218, and a leg-rest 220 movably mounted adjacent and beneath the forward end of the seat 216 and coordinated to movements of the back-rest 218.

The support or frame 212 includes substantially identical opposed frame parts 222 each including front and rear legs 224, 226, a connecting section 228 between the legs 224, 226, an upward extension 230 at one end of the connecting section, and an arm-rest 232 mounted on the upward extension. The identical side frame parts 222 are connected by a number of cross pieces, such as 234, 236.

The back-rest 218 of the body-supporting means 214 is rockably mounted on the support 212 at the pivots 238. The seat 216, in turn, carries a pair of rearwardly projecting bars 240 which rockably mount the seat 216 on the support 212 at the pivot 238 coaxially with the back-rest 218. These pivots could be at separate points spaced from each other.

An appropriate linkage arrangement is interconnected between the reclinable back-rest 218 and the seat 216 to transmit the movement of the back-rest 218 to the seat 216. In this form, the linkage means is disposed in a longitudinal center plane of the chair 210 and includes first and second guiding links 242, 244, and connecting links 246, 248 and 250. The first guiding link 242 has its upper end pivoted on the support 212 at the pivot 252 disposed between the front and rear legs 224, 226. At its lower end, the first guiding link 242 has a pivotal connection 254 to the connecting link 248. Intermediate the pivots 252, 254, the first guiding link 242 has a pivotal connection 256 to one end of the connecting link 246 which has a pivotal connection 258 to the lower end of

the back-rest 218 at a point spaced below the pivot 238 of the rockable structure 214 on the support 212. The second guiding link 244 has its upper end pivoted at 260 on the support 212 and has its lower end pivoted at 262 to the connecting link 248 at a location spaced from its foremost end. The guiding link 242, 244, the portion of the connecting link 248 between the pivots 254 and 262 and the portion of the support between the pivots 252 and 260 will be recognized as forming a four-bar linkage. The seat connecting link 250 is pivotally connected to a depending bracket on the seat 216 at the pivot 264 and has a pivotal connection 266 at its lower end to a lateral extension of the second guiding link 244, which extension is intermediate the ends of the second guiding link 244. As is well understood, the described linkage arrangement is effective to transmit the reclining movement of the back-rest 218 into coordinated movement of the seat 216. This coordinated movement may be best appreciated by progressively inspecting the relative positions of the seat and back-rest in Figs. 6 and 7.

In accordance with this form of the invention, the improved leg-rest control arrangement includes a pair of arms 270, 270' arranged at opposite sides of the seat 216 adjacent its forward end and each rockably mounted on its upper hooked end by the pivotal connection 272, 272' to opposite sides of the seat 216. Secured to and extending between the rockably mounted arm 270, 270' is a bridging piece 274 (i.e. a board covered with appropriate upholstery material) which bridging piece 274 automatically moves into a position at the forward end of the seat 216 intermediate the seat and the leg-rest 220 when the latter is moved to the extended position. At its forward side, the board 274 carries a rigid extension 288 which extends substantially in the plane of said board for a purpose to be subsequently described.

Extending across the respective arms 270, 270' is a first controlling link, generally designated by the reference numeral 276, which is connected at its rearward end to the connecting link 248 and at its forward end to the leg-rest 220. At a location intermediate its ends, the first controlling link 276 has pivotal and slidable connections to the respective arms 270, 270'. As seen best in Fig. 9, the first controlling link 276 includes a driven link 278 disposed in the longitudinal center plane of the chair 210 and having a pivotal connection 279 to the extension 248a of the connecting link 248, whereby the link 278 is driven from the extension 248a of the connecting link 248. Extending between opposite sides of the chair, specifically between the arms 270, 270', is a cross bar or pin 280 which is rigidly secured intermediate its ends to the driven link 278. The cross bar 280 has opposite end portions extending into elongated slots 282 formed in the respective arms 270, 270', whereby pivotal and slidable connections are provided between the first controlling link 276 (at the center plane) and the arms 270, 270' (at the opposite side planes). Rigid with the cross bar 280 are the further connecting links 284 having pivotal connections 286 with the leg-rest 220 adjacent its upper end and at its upper sides.

As seen best in Fig. 9, the extension 288 fixed to the board 274 centrally thereof has a pivotal connection 290 to one end of a connecting link 292 which likewise extends in the longitudinal center plane of the chair. The other end of the connecting link 292 is pivoted at 294 to the leg-rest 270 at a location spaced below the upper end of the leg-rest and the pivots 286 at the opposite sides of the chair. The connecting links 284 at the opposite sides of the chair, the connecting link 292 at the center of the chair, the rigid extension 288 on the board 274 at the center of the chair, and the portion of the leg-rest 220 between the pivots 286, 294 will be recognized as providing a four-bar control linkage for supporting the leg-rest 220 on the first controlling link 276.

As may be seen by progressively inspecting Figs. 6 and 7, the cross-bar or pin 280 moves between the upper

end of the slot 282 (Fig. 6) and the lower end of the slot 282 (Fig. 7) when the leg-rest 220 is extended in relation to the seat 216 in response to the reclining movement of the back-rest 218. In order to effectively guide the pin 280 on the first controlling link 276, a second controlling link 296 is disposed substantially in the longitudinal center plane of the chair, which second controlling link has a pivotal connection 298 at its lower end to the first controlling link 276 and has a pivotal connection 297 at its upper end to the seat 216. The pivotal connection 298 is made to the driven link 278 at a location rearwardly disposed relative to the pivotal and slidable connection between the first controlling link 276 and the arms 270, 270'. The pivotal connection 297 of the second controlling link 296 to the seat 216 is achieved by a bracket 299. As seen best in Fig. 8, the pivotal connection of the arms 270, 270' and of the second controlling link 296 are coaxial. The spacing between the pivotal mount 297, 299 for the second controlling link 296 and its pivotal connection 298 to the first controlling link 276 is greater than the spacing between the pivotal connection 272, 272' of the arms 270, 270' and their respective pivotal and slidable connections 280, 282 to the first controlling link 276. Thus, the second controlling link will traverse a greater arc than the arms 270, 270' whereby the leg-rest 220 is translated both outwardly and upwardly in response to the drive of the first controlling link 276 by the extension 248a of the connecting link 248. The second controlling link 296 guides the cross bar or pin 280 of the first controlling link 276 so that in response to the reclining of the back-rest 218, the pin 280 is urged towards the lower end of the slot (see Fig. 7) to extend the leg-rest 220 in relation to the seat. This provides the required longer support for the legs of the person using the chair. As the leg-rest 220 moves into the elevated and forwardly extended position of Fig. 7, the cross piece 274 which is rigid with the arms 270, 270' moves to the position substantially bridging the gap between the leg-rest 220 and the forward end of the seat 216.

In Figs. 10 and 11 there is illustrated a further embodiment of the invention, wherein parts corresponding to the previous embodiments have been designated by the same reference numerals of the "300" series. In this embodiment, the body-supporting means 314 includes a seat 316 rigid with a back-rest 318.

The leg-rest 320 is disposed adjacent to and beneath the forward end of the seat 316 and is supported thereon by identical linkage arrangements arranged at each side of the chair. The linkage arrangement each embodies an arm 370 pivoted on the seat 372 and having a pin and slot connection 380, 382 to a first controlling link 376. The first controlling link 376 is pivotally connected at 386 to the leg-rest 320 and a connecting link 392 is pivotally connected between the lower end of the arm 370 and the leg-rest 320 at the respective pivots 390, 394. The second controlling link 396 is pivoted on the seat coaxially at the pivot 376 and has a pivotal connection 398 to the first controlling link 376 at a location spaced rearwardly of the pin and slot connection 380, 382. Connected between the rigid seat and back-rest structure 314 and the leg-rest 320 and its controlling arrangement are connecting links 346, 348, guiding links 344, 350. The connecting link 346 is pivoted on the support 312 at a location intermediate its ends at the pivotal connection 347. The link 346 has its upper end pivotally connected at the pivot 358 to the seat 316 and has its lower end pivotally connected at the pivot 356 to the rearward end of the connecting link 348. The forward end of the connecting link 348 is pivotally connected at the pivot 362 to a lateral integral extension of the guiding link 344. The upper end of the guiding link 344 is pivotally mounted on the support 312 at the pivotal connection 360. The lower end of the guiding links 344 is pivotally connected at the pivotal connection 362 to the rearward end of

the first controlling link 376. The guiding link 350 has its upper end pivotally connected to the seat 316 at 364 and has its lower end pivotally connected to the support or frame 213 at 366.

In this embodiment, when the back-rest 318 is urged rearwardly to the reclined position, the unitary seat 316 is moved therewith and the leg-rest 320 is extended outwardly, upwardly and forwardly as seen in Fig. 11 by the linkage arrangement which is coordinated to the body-supporting unit 314 by the links 344, 346, 348.

From the foregoing illustrative embodiments of the invention, it will be appreciated that in accordance with the present invention an improved leg-rest control arrangement is provided which is compatible with the space and structural limitations imposed for chairs of this type, yet provides for the extension of the leg-rest in relation to the seat to comfortably accommodate the user in the reclined position. A latitude of modifications, change and substitution is intended in the foregoing disclosure and accordingly the appended claims should be construed broadly and in a manner consistent with the spirit and scope of the invention. In some instances, some features of the invention will be used without a corresponding use of other features.

What I claim is:

1. An improved leg-rest and control arrangement for use in a chair including a support and body supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally mounting said arm on said seat, a first controlling link having a pivotal and slidable connection to said arm, a second controlling link, means pivotally mounting said second controlling link on said seat, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, said first controlling link being connected to and supporting said leg-rest, a connecting link pivotally connected to said arm and to said leg-rest, and linkage means connected to said seat, back-rest and first controlling link for coordinating movement of said seat and leg-rest to movement of said back-rest.

2. An improved leg-rest and control arrangement for use in a chair including a support and body supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally connecting said arm on said seat, a first controlling link crossing said arm and having a pivotal and slidable connection to said arm, a second controlling link, means pivotally connecting said second controlling link on said seat, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, the spacing between the pivotal connection for said second controlling link on said seat and its pivotal connection to said first controlling link being greater than the spacing between the pivotal connection for said arm on said seat and its pivotal and slidable connection to said first controlling link, a connecting link pivoted at one end to said arm and at the other end to said leg-rest, said first controlling link being connected to and supporting said leg-rest at a point spaced from the pivot between said connecting link and said leg-rest and linkage means connected to said seat, back-rest and first controlling link for coordinating movement of said seat and leg-rest to movement of said back-rest.

3. An improved leg-rest and control arrangement for use in a chair including a support and body supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally mounting said arm on a part of said chair, a first controlling link crossing said arm and hav-

ing a pivotal and slidable connection to said arm, a second controlling link, means pivotally mounting said second controlling link on said seat, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, the spacing between the pivotal mounting for said second controlling link and its pivotal connection to said first controlling link being greater than the spacing between the pivotal mounting for said arm and its pivotal and slidable connection to said first controlling link, said first controlling link being connected to and supporting said leg-rest, a connecting link pivotally connected to said arm and to said leg-rest, and linkage means connected to said seat, back-rest and first controlling link for coordinating movement of said seat and leg-rest to movement of said back-rest.

4. An improved leg-rest and control arrangement for use in a chair including a support and body supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally connecting said arm on said seat, a first controlling link crossing said arm and having a pivotal and slidable connection to said arm, a second controlling link, means pivotally connecting said second controlling link on said seat, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, the spacing between the pivotal connection for said second controlling link on said seat and its pivotal connection to said first controlling link being greater than the spacing between the pivotal connection for said arm on said seat and its pivotal and slidable connection to said first controlling link, said first controlling link being connected to and supporting said leg-rest, a connecting link pivotally connected to said arm and to said leg-rest, and linkage means connected to said seat, back-rest and first controlling link for coordinating movement of said seat and leg-rest to movement of said back-rest, said linkage means including at least one guide link pivoted to said support.

5. An improved leg-rest and control arrangement for use in a chair including a support and body-supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally mounting said arm on said seat, a first controlling link having a pivotal and slidable connection to said arm, a second controlling link, means pivotally mounting said second controlling link on said seat coaxially with the pivotal support for said arm, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, the spacing between the pivotal mounting for said second controlling link and its pivotal connection to said first controlling link being greater than the spacing between the pivotal mounting for said arm and its pivotal and slidable connection to said first controlling link, said first controlling link being connected to and supporting said leg-rest, a connecting link pivotally connected to said arm and to said leg-rest, and linkage means connected to said seat, back-rest and first controlling link for coordinating movement of said seat and leg-rest to movement of said back-rest.

6. An improved leg-rest and control arrangement for use in a chair according to claim 5 wherein said linkage means include first and second guiding links pivoted on said support, and a connecting link pivotally connected to said first and second guiding links and to said first controlling link.

7. An improved leg-rest and control arrangement according to claim 5 wherein said linkage means include a guiding link pivoted on said support and a connecting link pivotally connected to said guiding link and to said back-rest.

8. An improved leg-rest and control arrangement for use in a chair according to claim 5 wherein said seat and back-rest are rigidly connected together and wherein said linkage means include a guiding link pivotally connected to said support and having an operative connection to said first controlling link.

9. An improved leg-rest and control arrangement for use in a chair including a support and body supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally mounting said arm on said seat, a first controlling link having a pivotal and slidable connection to said arm, a second controlling link, means pivotally supporting said second controlling link on said seat at a location spaced from the pivotal mounting for said arm said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, the spacing between the pivotal mounting for said second controlling link and its pivotal connection to said first controlling link being greater than the spacing between the pivotal mounting for said arm and its pivotal and slidable connection to said first controlling link, said first controlling link being connected to and supporting said leg-rest, a connecting link pivotally connected to said arm and to said leg-rest, and linkage means connected to said seat, back-rest and first controlling link for coordinating

movement of said seat and leg-rest to movement of said back-rest.

10. An improved leg-rest and control arrangement for use in a chair including a support and body supporting means having a seat and a back-rest rockably mounted on said support, said arrangement comprising a leg-rest disposed adjacent the forward end of said seat, an arm, means pivotally mounting said arm on said seat, a first controlling link having a pivotal and slidable connection to said arm, a second controlling link, means pivotally mounting said second controlling link on said seat, said second controlling link having a pivotal connection to said first controlling link at a location spaced rearwardly of said pivotal and slidable connection, said first controlling link being connected to and supporting said leg-rest, a connecting link pivotally connected to said arm and to said leg-rest, seat control means pivotally connected to said seat, and linkage means connected between said back-rest, said seat control means and said first controlling link for coordinating movement of said seat and leg-rest to movement of said back-rest.

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