Sept. 10, 1963 F. F. SCHLIEPHACKE 3,103,381

RECLINING CHAIR

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FIG. 1.

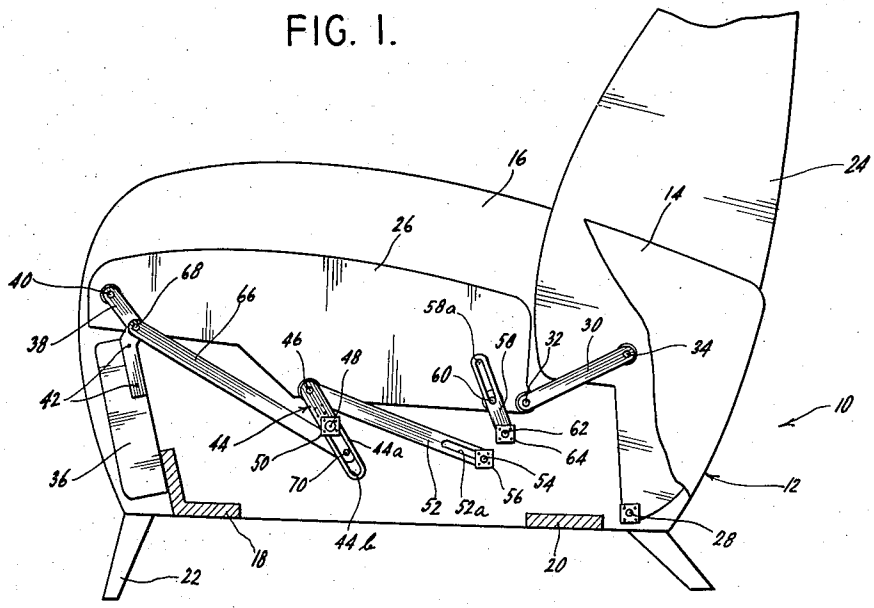
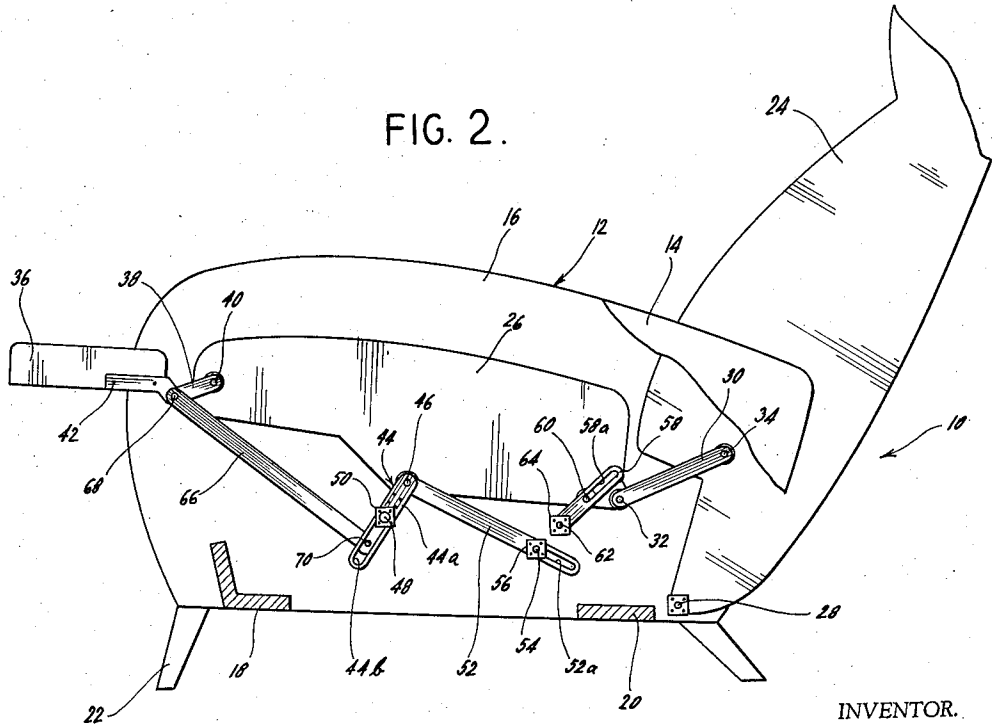


FIG. 2.



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FIG. 7.

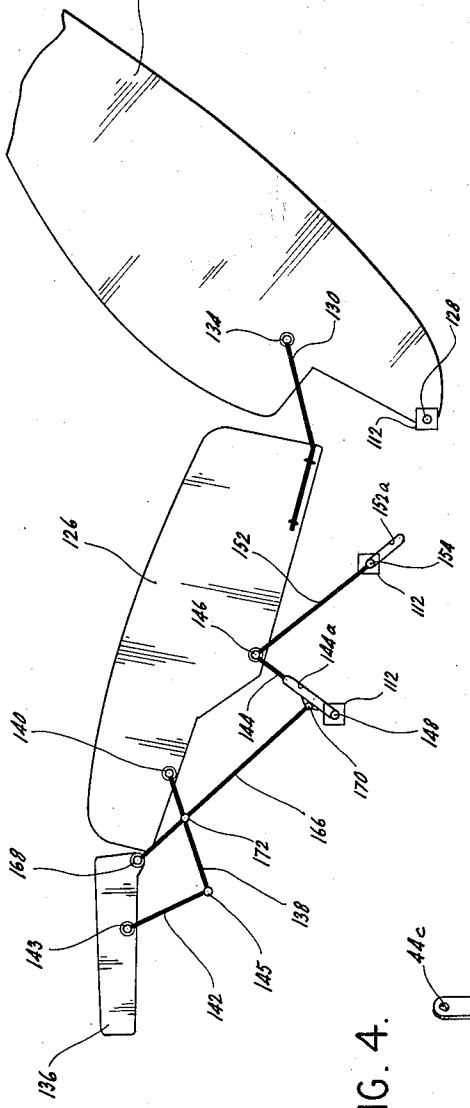


FIG. 3.

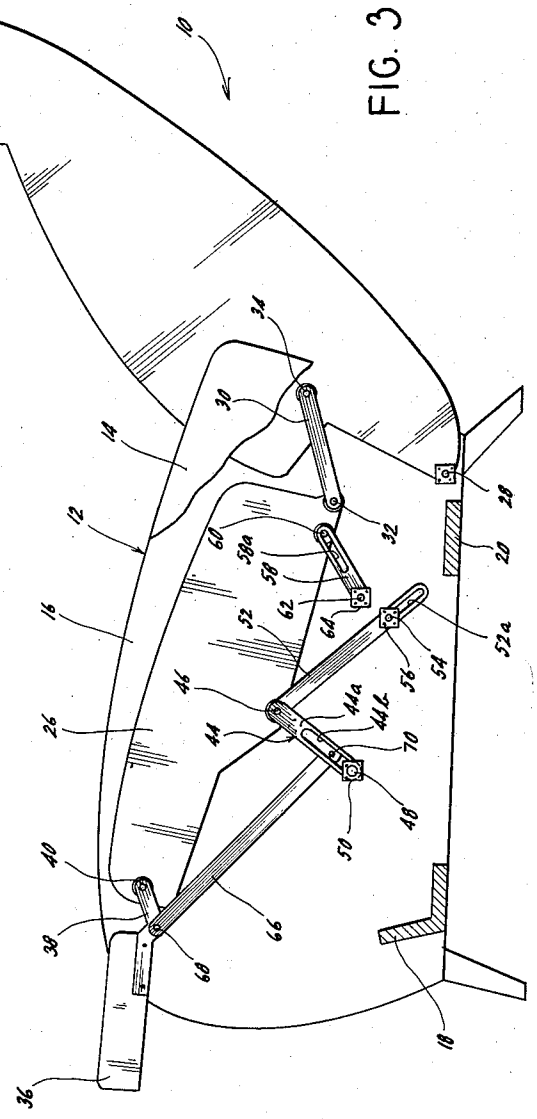
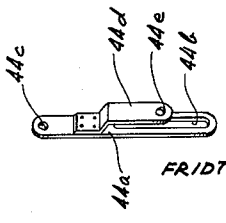


FIG. 4.



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FIG. 5.

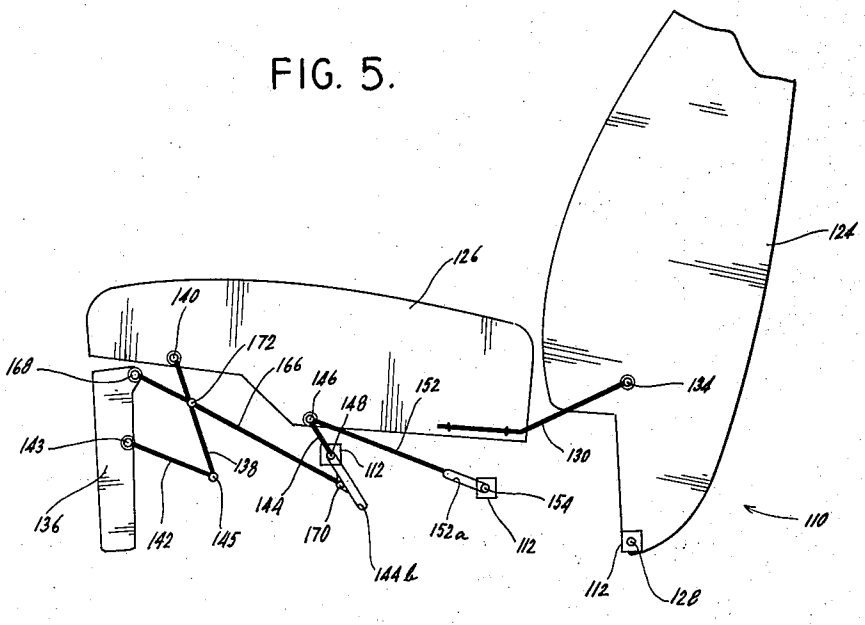
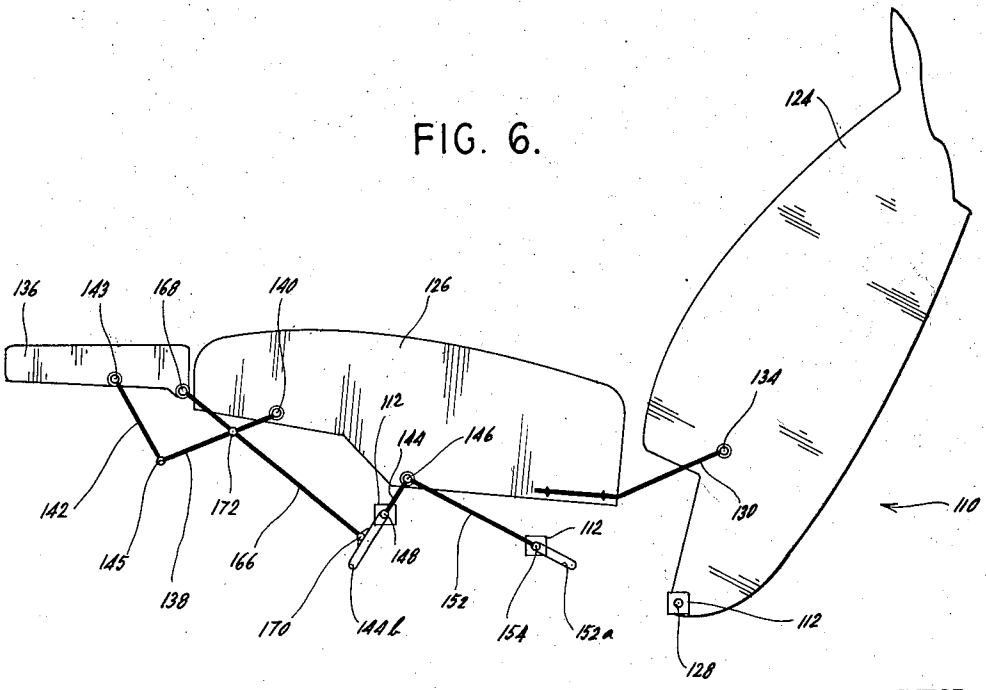


FIG. 6.



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FIG. 8.

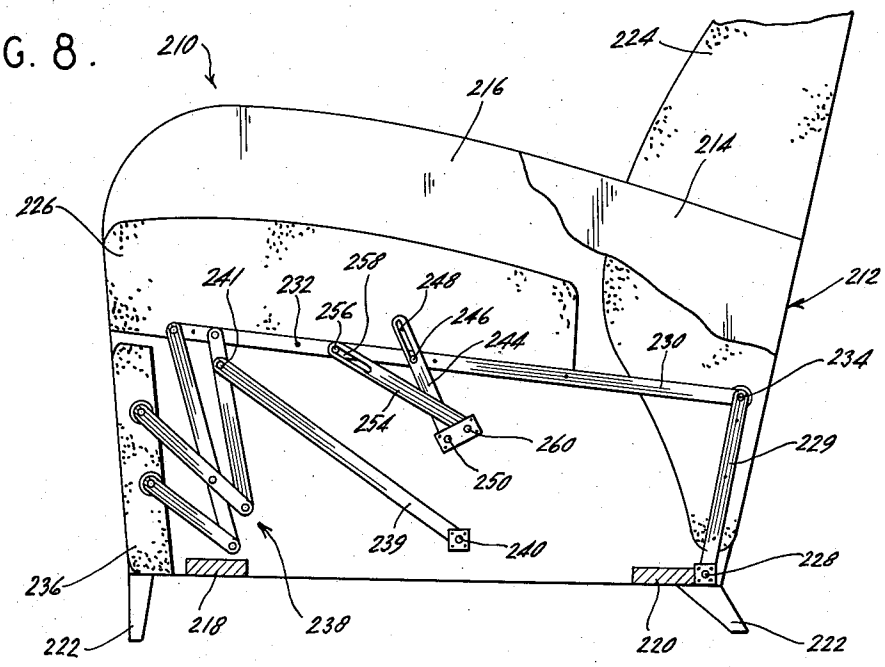
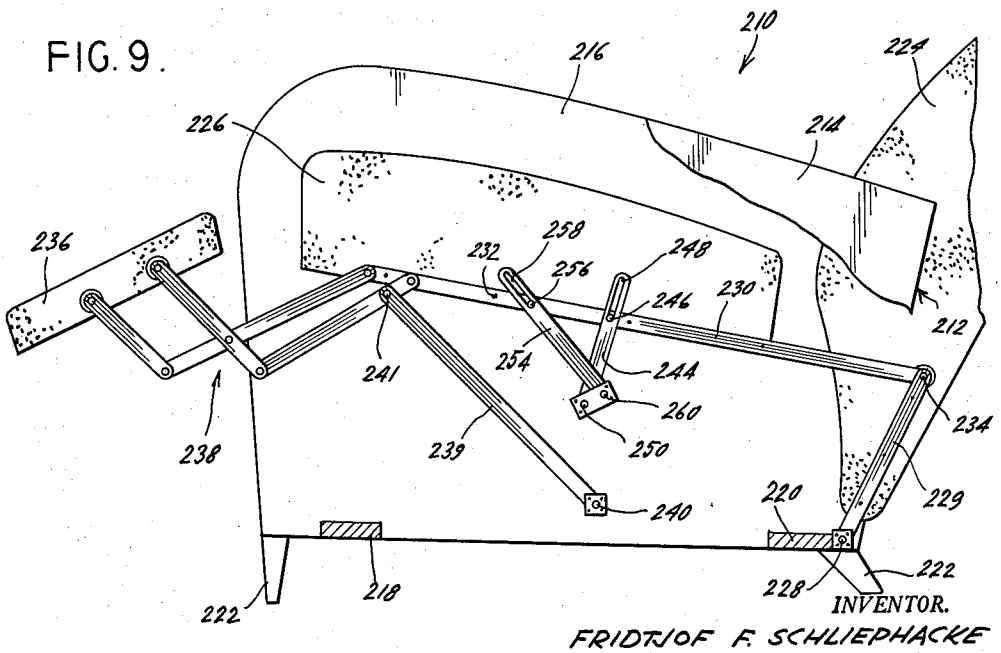


FIG. 9.



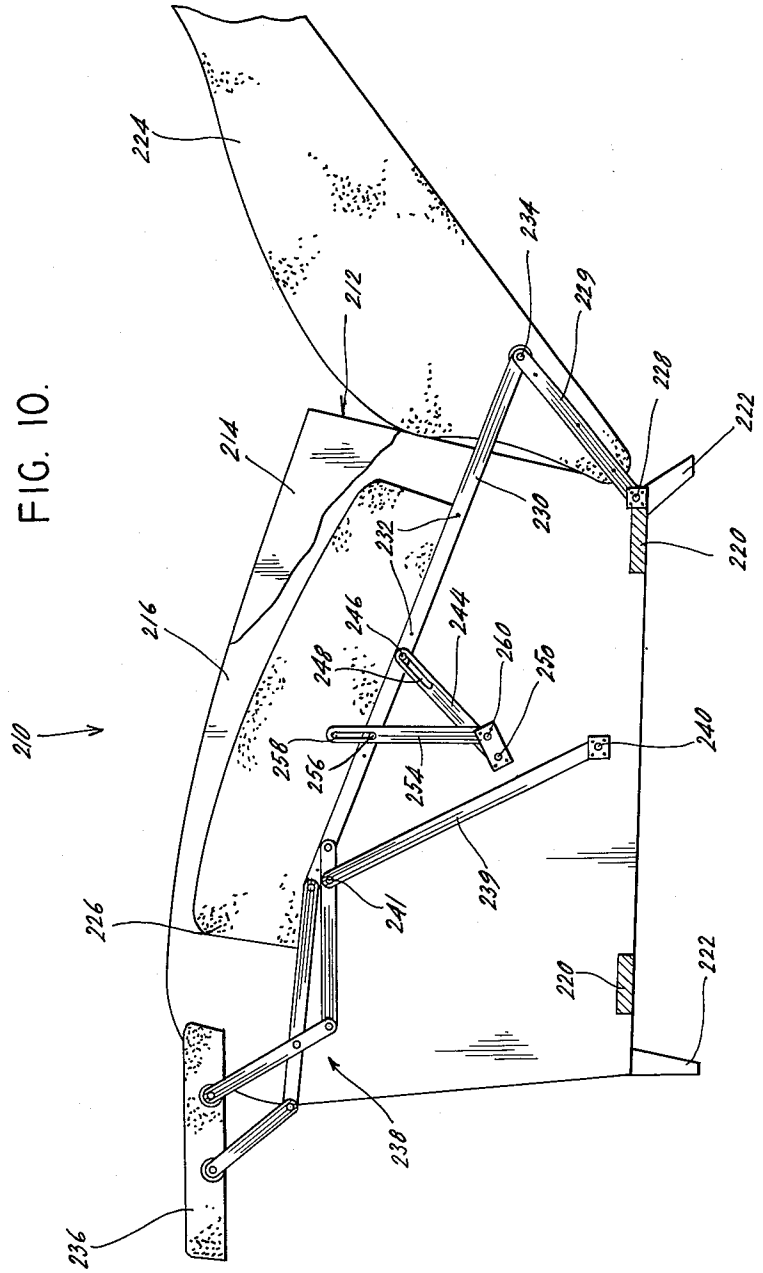
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FIG. 10.



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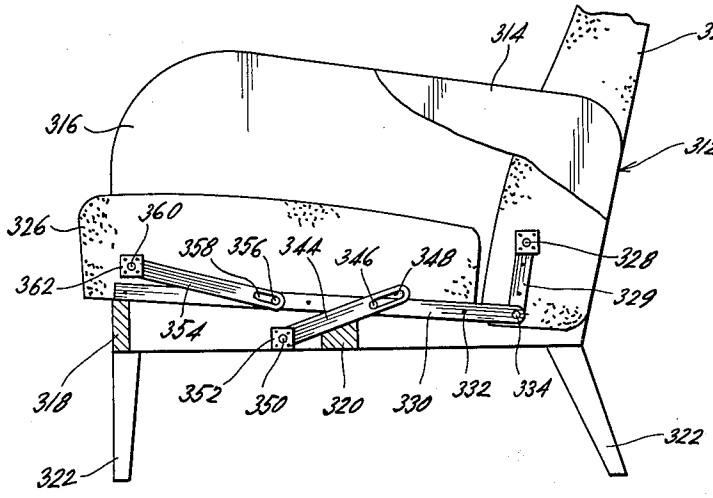


FIG. 11.

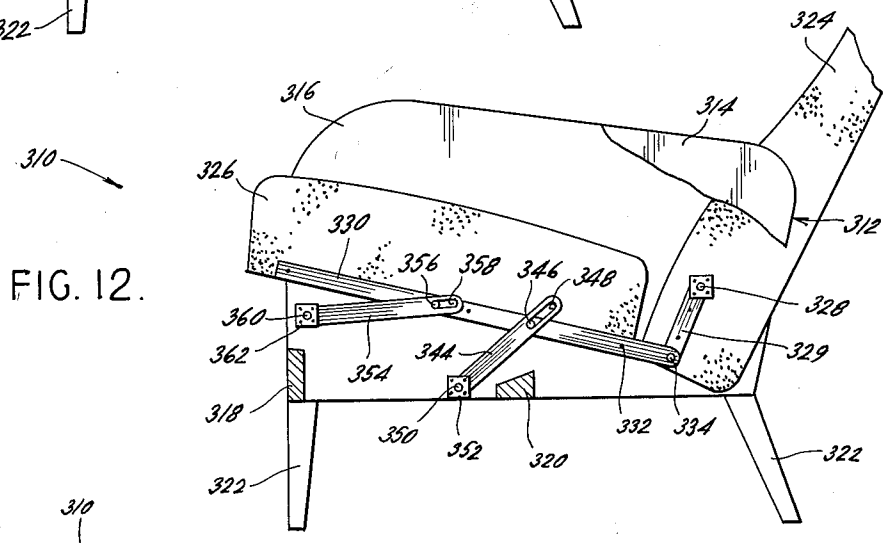


FIG. 12.

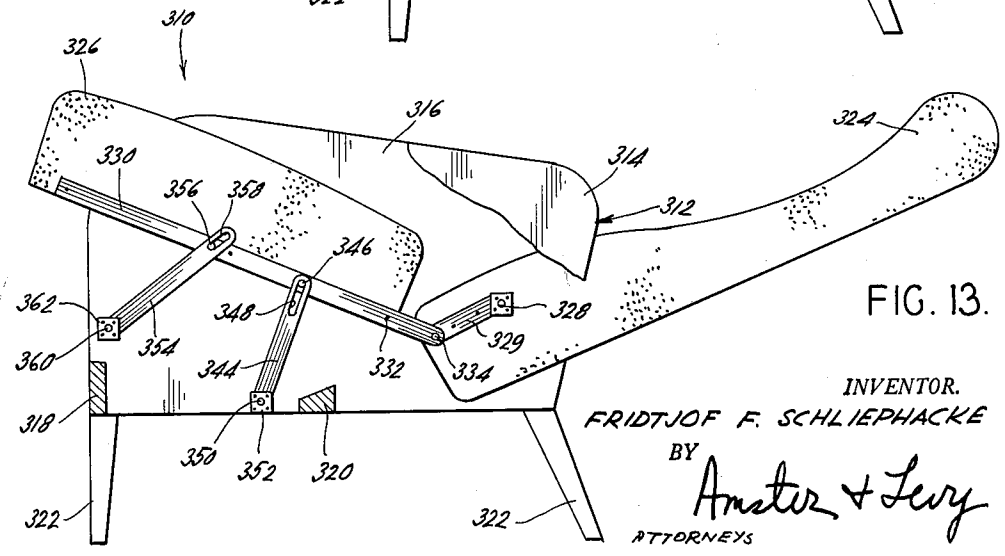


FIG. 13.

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3,103,381

RECLINING CHAIR

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Filed May 31, 1960, Ser. No. 33,359
14 Claims. (Cl. 297—84)

The present invention relates generally to reclining chairs of the type including a movable seat, back-rest and leg-rest, and in particular to improved reclining chairs of the double movement type wherein during the first phase of the reclining movement the leg-rest is moved to an elevated leg-supporting position and during a further phase of the reclining movement the leg-rest remains in an elevated leg-supporting position while the seat and back-rest of the body-supporting unit moves into a final or fully reclined position.

This is a continuation-in-part of my earlier filed application Serial No. 761,822, filed September 18, 1958 entitled "Reclining Chair" and now abandoned.

The well known reclining chair comprises a support, a back-rest mounted on a support for reclining movement about a back-rest pivot, and a seat mounted on the support or on the back-rest for inclining movement about a seat pivot, with appropriate means for coordinating the inclining movement of the seat to the reclining movement of the back-rest. Usually such reclining chairs also include a leg-rest which is mounted below the seat for elevating movement to various leg-supporting positions, with an appropriate leg-rest control means operatively connected to the leg-rest for elevating the same in response to the coordinated movement of the back-rest and seat of the body-supporting unit.

Of recent times there has been developed an improved reclining chair of the double movement type in which there are two phases of chair movement. During a first phase or portion of the chair movement, the body-supporting unit is moved to an intermediate tilted sitting position and the leg-rest is moved into an elevated leg-supporting position such that the several components of the chair comfortably accommodate the chair occupant in an attitude appropriate for viewing television, reading, sewing and the like. During a second phase or further portion of the reclining movement, the seat and back-rest are displaced relative to each other to comfortably accommodate the chair occupant in an attitude appropriate for complete relaxation, with the leg-rest remaining substantially in the elevated leg-supporting position during such further movement. In the final or fully reclined position the chair components are appropriately located relative to each other to enable the chair occupant to completely relax.

Broadly, it is an object of the present invention to provide an improved reclining chair of the double movement type. Specifically, it is within the contemplation of the present invention to provide an improved control arrangement which achieves coordinated movement of the seat and leg-rest in response to reclining movement of the back-rest such that the requisite relative positions of the chair components are realized during the first and second phases of the reclining movement.

In accordance with an illustrative embodiment demonstrating features and advantages of the present invention, my improved reclining chair of the double movement type comprises a support, body-supporting means including a seat and back-rest mounted on the support for inclining and reclining movement respectively, and control means operatively connected between said support and said seat for effecting coordinated inclining movement of the seat in response to reclining movement of

the back-rest. The control means includes a first guiding means, a first lost motion means operatively connecting said first guiding means to one of said seat and support, and means including a first pivot operatively connecting said first guiding means to the other of said seat and said support. The first guiding means is effective during movement of said body-supporting means into an intermediate tilted sitting position to impart a first inclination to said seat. Further, the control means includes a second guiding means, a second lost motion means operatively connecting said second guiding means to one of said seat and said support, and means including a second pivot operatively connecting said first guiding means to the other of said seat and said support. The second lost motion means provides a lost motion travel between said support and one of said second guiding means and said seat as said body-supporting means moves into said intermediate tilted sitting position. The second guiding means is effective during movement of the body-supporting means into a reclined position to impart a second inclination to the seat, while the first lost motion means provides a lost motion travel between the support and one of the first guiding means and the seat as the body-supporting means moves into the reclined position. In a typical chair, a leg-rest is movably supported and coordinated to the control means to move into an elevated leg-supporting position as the body-supporting means moves into the intermediate tilted sitting position, with the leg-rest remaining in the elevated leg-supporting position during movement of the body-supporting means into the reclined position. Advantageously, the several elements of the control means may be mounted by means of pin-and-slot interconnections such that the desired coordinated movement is achieved with essentially simple mechanisms, thereby minimizing the possibility of malfunctioning.

The above brief description, as well as further objects, features and advantages of the present invention will be more fully appreciated by reference to the following detailed description of several illustrative embodiments demonstrating features of the present invention, when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is an elevational view, wtih parts broken away and sectioned, of a reclining chair of the double movement type demonstrating features of the present invention and shown in the upright or sitting position;

FIG. 2 is an elevational view similar to FIG. 1, but showing the reclining chair in the intermediate tilted sitting position;

FIG. 3 is an elevational view similar to FIG. 1, but showing the chair in the extreme or fully reclined position;

FIG. 4 is a perspective view of a mounting fixture which serves as the first guiding link in the embodiment illustrated in FIGS. 1–3 inclusive;

FIG. 5 is an elevational view with parts broken away and sectioned, of a further reclining chair demonstrating features of the present invention, shown in the upright or sitting position;

FIG. 6 is an elevational view similar to FIG. 5, but showing the reclining chair in the intermediate tilted sitting position;

FIG. 7 is a diagrammatic view of a reclining chair in FIG. 4, but with the chair illustrated in the extreme or fully reclined position;

FIG. 8 is an elevational view with parts broken away and sectioned, of a further reclining chair demonstrating features of the present invention, shown in the upright or sitting position;

FIG. 9 is an elevational view similar to FIG. 8, but

showing the reclining chair in the intermediate tilted sitting position;

FIG. 10 is a diagrammatic view of a reclining chair in FIG. 8, but with the chair illustrated in the extreme or fully reclined position;

FIG. 11 is an elevational view with parts broken away and sectioned, of a further reclining chair demonstrating features of the present invention, but with the leg-rest and its control and mounting arrangement removed for the purposes of illustration, shown in the upright or sitting position;

FIG. 12 is an elevational view similar to FIG. 11 of a further reclining chair demonstrating features of the present invention, but with the leg-rest and its control and mounting arrangement removed for the purposes of illustration, shown in the intermediate tilted sitting position; and

FIG. 13 is a diagrammatic view of the reclining chair of FIG. 11, but with the leg-rest and its control and mounting arrangement removed for the purposes of illustration, shown in the extreme or fully reclined position.

Referring now specifically to the drawings, there is shown in FIGS. 1–4 a first embodiment of reclining chair of the double movement type demonstrating features of the present invention and generally designated by the reference numeral **10**. The chair **10** includes a support **12** having opposite side walls **14**, **16** interconnected by appropriate cross-braces or bars **18**, **20** and supported on depending legs **22**.

Pivotally mounted on the support is a body-supporting unit including a back-rest **24** and a seat **26**. The back-rest **24** is mounted for reclining movement at a back-rest pivot **28** provided adjacent the lower end of the beck-rest and appropriately connected to the side walls **14**, **16** of the support **12**. The seat **26** is mounted for inclining movement as a function of or in response to the reclining movement of the back-rest **24** by the provision of rearwardly directed hanger links **30** which have pivotal connections **32** at their forward ends to the seat and pivotal connections **34** at their rearward ends to the back-rest at a point spaced above the back-rest pivot **28**.

Disposed beneath the forward end of the seat is a leg-rest **36** which is mounted for movement from a stored position, illustrated in FIG. 1, contained within the outline of the side walls **14**, **16** of the chair frame or support **12**, to various elevated leg-supporting positions, as illustrated respectively in FIGS. 2 and 3. In this embodiment the leg-rest **36** is mounted for its elevating movement beneath the forward end of the seat by means of a hanger **38** which has a pivotal connection **40** at its upper end to the seat **26** and is rigidly connected adjacent its lower end to the leg-rest, as by being riveted or bolted thereto, as indicated by the reference numeral **42**.

Operatively connected between the support **12**, the seat **26** and the leg-rest **36** is a combined seat and leg-rest control means which is effective to achieve the coordinated movement of the seat and leg-rest in response to reclining movement of the back-rest as will now be described. The combined seat and leg-rest control means includes a first guiding link **44**, which is normally disposed in a forwardly inclined position, as illustrated in FIG. 1. The first guiding link **44** is shown in detail in FIG. 4 and includes an elongated link body **44***a* which is provided with an elongated slot **44***b* extending upwardly from its lowermost end and terminating short of its uppermost end and with a pivot pin opening **44***c* contiguous to its uppermost end. Fixed to the elongated link body **44***a* is an offset bracket arm **44***d* which extends substantially parallel to and is disposed rearwardly of the elongated link body **44***a* and is provided contiguous to its lowermost end with a connecting pin opening **44***e*. As seen in FIG. 1, the uppermost end of the first guiding link **44** has a pivotal connection to the seat **26** substantially intermediate its ends, the pivotal connection being provided by a pivot pin **46** which extends into the pivot pin opening **44***c* in the upper end of

the elongated link body **44***a*. The first guiding link **44** is mounted on the support **12** for turning movement about a first pivot and for translating movement relative to the first pivot, and to this end, a first stationary pivot pin **48** is fixed to the support **12** by an appropriate mounting fixture **50**, with the pin **48** being slidably received within the elongated slot **44***b* and normally being disposed contiguous to the upper end of the elongated slot **44***b* in the upright sitting position of the chair. As will be more fully appreciated as the description proceeds, the pin **48** and slot **44***b* serve as a lost motion connection which mounts the first guiding link **44** for translating movement relative to the first stationary pivot **48**. In accordance with principles which are generally understood, the pin may be provided on the link and the slot on the support to achieve substantially the same action, with the first guiding link **44** being mounted to turn about a pivot and to translate through a lost motion stroke as established by the length of the accommodating slot.

The combined seat and leg-rest control means further includes a second guiding linke **52** which is operatively connected to the seat **26** and is mounted on the support **12** for turning movement about a second stationary pivot and for translating movement relative to the second pivot. In this embodiment, the second guiding link **52** extends forwardly and upwardly from its lowermost end to its uppermost end, with the uppermost end being operatively connected to the seat **26** at the pivotal connection **46**. Contiguous to the lower end of the second guiding link **52**, there is provided an elongated slot **52***a* which accommodates a second stationary pivot pin **54** which is mounted on the support **12** by an appropriate mounting fixture **56** such that the second stationary pivot pin **54** is contiguous to the rearward end of the slot **52***a* in the normal or upright sitting position of the chair. Mounting of the second guiding link **52** for turning movement about a second pivot and for translating movement relative to the support also may be achieved by reversal of the pin and slot or lost motion interconnection.

The combined seat and leg-rest control means further include a third guiding link **58** which is operatively connected to the seat **26** contiguous to the rearward end thereof and is mounted on the support **12** for turning movement about a third fixed or stationary pivot. The third guiding link **58** extends upwardly and forwardly from its lowermost end and is provided with an elongated slot **58***a* extending downwardly from its uppermost end. The slot **58***a* accommodates a pivot pin **60** carried on the seat **26**, with the pin **60** normally being disposed contiguous to the lowermost end of the slot **58***a* in the normal or upright sitting position of the chair. The lowermost end of the third guiding link **58** is pivotally mounted on the support **12** by means of a stationary pivot pin **62** and an appropriate mounting fixture **64**.

In order to move the leg-rest **36** to the requisite elevated leg-supporting position in response to turning movement of the first guiding link **44**, there is provided a connecting link **66** which has a pivotal connection **68** at its forward end to the hanger **38** for the leg-rest and has a pivotal connection **70** at its rearward end to the offset bracket arm **44***d* of the first guiding link at the connecting pin opening **44***e*. In response to clockwise movement of the lower end of the first guiding link about the stationary pivot **48**, a forward thrust is imparted via the connecting link **66** to the hanger **38** which in turn elevates the leg-rest, as may be appreciated by progressively inspecting FIGS. 1 and 2.

In order to facilitate a more thorough understanding of the present invention, a typical sequence of operations will be described, making progressive reference to FIGS. 1–3 inclusive:

As the chair occupant leans against the back-rest **24**, the back-rest begins to translate rearwardly about the back-rest pivot **28** which in turn causes the seat **26** to

move rearwardly. The portion of the first guiding link 44 intermediate the pivots 46, 48 moves through an upward and rearward arc to impart a first inclination to the seat. Preferably, the inclination imparted to the seat is such that there is relatively no angular displacement between the seat and back-rest during the first phase of the reclining movement which terminates as will be described hereinafter. As the seat 26 moves rearwardly, a rearwardly directed thrust is imparted to the second guiding link 52 which translates relative to the second stationary pivot 54 through a lost motion stroke. The third guiding link 58 translates or turns about the pivot 62 with the pin 60 remaining in the lower end of the slot 58*a*. In response to the turning movement of the first guiding link 44, the bracket arm 44*d* moves through a forward and upwardly directed arc which imparts a forward thrust to the connecting link 66 which in turn moves the leg-rest 36 into successive elevated leg-supporting positions. When the leg-rest 36 arrives at the required elevated leg-supporting position extending forwardly of the seat 26, as illustrated in FIG. 2, and the slot 52*a* translates relative to the pivot 54 into an end-limit position wherein the forward end of the slot bears against the pivot 54 (which corresponds to the end of the lost motion travel of the second guiding link 52 relative to the stationary pivot 54), the end of the first phase of the reclining movement is substantially completed. It will be appreciated that at the end of such first phase the seat 26 and back-rest 24 are in an intermediate tilted sitting position, as seen in FIG. 2, with the leg-rest 36 elevated into the requisite leg-supporting position forwardly of the seat.

As the chair occupant leans further against the back-rest 24 the second phase of the reclining movement is initiated, with the second guiding link 52 translating or turning about the pivot 54 through an upward and rearwardly directed arc to impart a second inclination to the seat. The second guiding link 52 causes the seat 26 to be inclined at a rate such that there is angular displacement between the seat 26 and the back-rest 24 until the seat and back-rest are disposed relative to each other to achieve the requisite fully reclined position, illustrated in FIG. 3. As the seat is inclined under control of the second guiding link 52 during the second or further phase of the reclining movement, the first guiding link 44 translates relative to its fixed pivot 48, with such translation or lost motion being permitted by the slot 44*b*. It will be appreciated that the translation of the first guiding link 44 relative to the stationary pivot 48 substantially does not affect the leg-rest 36 which remains in the requisite elevated leg-supporting position forwardly of the seat 26. When the lowermost end of the slot 44*b* binds against the pivot 48, the lost motion travel of the first guiding link 44 stops and the second or further motion phase ends with the chair fully reclined. During such second or further phase of the motion, the pin 60 engaged in the slot 58*a* of the third guiding link 58 translates upwardly along the slot through a lost motion travel. To restore the chair to the upright or normal sitting position, the chair occupant merely leans forward and exerts a pressure on the leg-rest 36 whereupon the chair is restored to the upright sitting position as established by the contact of the rear surface of the leg-rest 36 against the forward cross brace or bar 18 of the support 12 which serves as a stop.

Referring now specifically to FIGS. 5 to 7, there is illustrated diagrammatically a further embodiment of reclining chair of the double movement type demonstrating features of the present invention, and generally designated by the reference numeral 110.

The chair 110 includes a support 112 having opposite side walls interconnected by appropriate cross-braces or bars and supported on depending legs, which support is similar to that illustrated in FIGS. 1 to 3. Pivotally

mounted on the support is a body-supporting unit including a back-rest 124 and a seat 126. The back-rest 124 is mounted for reclining movement at a back-rest pivot 128 provided adjacent the lower end of the back-rest 124 and appropriately connected to the support 112. The seat 126 is mounted for inclining movement as a function of or in response to the reclining movement of the back-rest 124 by the provision of rearwardly directed hangers 130 which are rigidly connected at their forward ends to the seat and pivotally connected at their rearward ends to the back-rest at a seat pivot 134 at a point spaced above the back-rest pivot 128.

Disposed beneath the forward end of the seat is a leg-rest 136 which is mounted for movement from a stored position, illustrated in FIG. 5, to various elevated leg-supporting positions, as illustrated respectively in FIGS. 6 and 7. In this embodiment the leg-rest 136 is mounted for its elevating movement from beneath the forward end of the seat by means of a supporting link 138 which has a pivotal connection 140 at its upper end to the seat 126 and is pivotally connected adjacent its lower end to the leg-rest by a connecting link 142 which has a pivotal connection 143 at its forward end to the leg-rest and a pivotal connection 145 at its rearward end to the link 138.

Operatively connected between the support 112, the seat 126 and the leg-rest 136 is a combined seat and leg-rest control means which is effective to achieve the coordinated movement of the seat 126 and leg-rest 136 in response to reclining movement of the back-rest 124. The combined seat and leg-rest control means includes a first guiding link 144, which may be identical to the link 44 illustrated in FIG. 4, and is normally disposed in a forwardly inclined position, as illustrated in FIG. 5. The uppermost end of the first guiding link 144 has a pivotal connection 146 to the seat 126 substantially intermediate its ends and is mounted on the support 112 for turning movement about a first pivot and for translating movement relative to the first pivot. To this end, a first stationary pivot pin 148 is fixed to the support 112 by an appropriate mounting fixture, with the pin 148 being slidably received within an elongated slot 144*b* and normally being disposed contiguous to the upper end of the slot in the upright sitting position of the chair. Thus, the first guiding link 144 is mounted to turn about the pivot 148 and to translate relative to the pivot 148 through a lost motion stroke as established by the length of the accommodating slot 144*b*.

The combined seat and leg-rest control means further includes a second guiding link 152 which is operatively connected to the seat 126 and is mounted on the support for turning movement about a second pivot and for translating movement relative to the second pivot. In this embodiment, the second guiding link 152 extends forwardly and upwardly from its lowermost end to its uppermost end, with the uppermost end being operatively connected to the seat 126 at the pivotal connection 146. Contiguous to the lower end of the second guiding link there is provided an elongated slot 152*a* which accommodates a second stationary pivot pin 154 which is mounted on the support 112 such that the second stationary pivot pin is contiguous to the rearward end of the slot 152*a* in the normal or upright sitting position of the chair. This mounts the second guiding link 152 for turning movement about the second pivot and for translating movement relative to the second pivot through a lost motion stroke.

In order to move the leg-rest 136 to the requisite elevated leg-supporting position in response to turning movement of the first guiding link 144 and to complete the leg-rest supporting linkage, there is provided a connecting link 166 which has a pivotal connection 168 at its forward end to the leg-rest 136 and has a pivotal connection 170 at its rearward end to the offset bracket arm of the first guiding link 144. The connecting link 166 crosses over the supporting link 138 and has a coordinating pivotal connection 172 thereto. In response to clockwise movement of the

first guiding link 144 about the stationary pivot 148, a forward thrust is imparted via the connecting link 166 to the hanger 138 which in turn elevates the leg-rest, as may be appreciated by progressively inspecting FIGS. 5 and 6.

In order to facilitate a more thorough understanding of this embodiment of the present invention, a typical sequence of operations will be described, making progressive reference to FIGS. 5–7 inclusive:

As the chair occupant leans against the back-rest 124, the back-rest begins to translate rearwardly about the back-rest pivot 128 which in turn causes the seat 126 to move rearwardly. The portion of the first guiding link 144 intermediate the pivots 146, 148 moves through an upward and rearward arc to impart a first inclination to the seat. As the seat 126 moves rearwardly, a rearwardly directed thrust is imparted to the second guiding link 152 which translates relative to the second stationary pivot 154 through a lost motion stroke. In response to the turning movement of the first guiding link 144, the bracket arm moves through a forward and upwardly directed arc which imparts a forward thrust to the connecting link 166 which in turn moves the leg-rest 136 into various elevated leg-supporting positions. When the leg-rest 136 arrives at the elevated leg-supporting position extending forwardly of the seat 126, as illustrated in FIG. 6, and the pivot 154 binds in the slot 152*a*, which corresponds to the end of the lost motion travel of the second guiding link 152 relative to the stationary pivot 154, the end of the first phase of the reclining movement is substantially completed. It will be appreciated that at the end of such first phase the seat and back-rest are in an intermediate tilted position as seen in FIG. 6, with the leg-rest elevated into the requisite leg-supporting position forwardly of the seat.

As the chair occupant leans further against the back-rest 124 the second phase of the reclining movement is initiated, with the second guiding link 152 translating or turning about the pivot 154 through an upward and rearwardly directed arc to impart a second inclination to the seat. The second guiding link 152 causes the seat to be inclined at a rate such that there is angular displacement between the seat and back-rest such that the seat and back-rest are disposed relative to each other to achieve the requisite fully reclined position illustrated in FIG. 7. As the seat is inclined under control of the second guiding link 152 during the second or further phase of the reclining movement, the first guiding link 144 translates relative to its fixed pivot 148 with such translation or lost motion being permitted by the slot 144*b*. It will be appreciated that the translation of the first guiding link 144 relative to the stationary pivot 148 substantially does not affect the leg-rest which remains in the requisite elevated leg-supporting position forwardly of the seat. When the lowermost end of the slot 144*b* binds against the pivot 148, the lost motion travel of the second guiding link stops and the end of the second or further motion phase ends.

Referring now specifically to FIGS. 8 to 10, there is shown a still further embodiments of reclining chair 210 embodying features of the present invention which include a support 212 having opposite side walls 214, 216 interconnected by appropriate cross braces 218, 220 and supported on depending legs 222. Movably mounted on the support is a body-supporting unit which includes a back-rest 224 and a seat 226. Specifically the back-rest 224 is mounted for reclining movement about a back-rest pivot 228 on a bracket 229 extending longitudinally of and secured to the lower end of the back-rest and appropriately journaled on the side walls onto the support 212. The seat is mounted for inclining movement as a function of and in response to the reclining movement of the back-rest 224 by the provision of a rearwardly directed hanger link 230 which has plural rigid connections 232 at spaced locations along its length to the seat 226 and a pivotal connection 234 at its rearward end to the back-rest 224 at a point spaced above the back-rest pivot 228.

Disposed beneath the forward end of the seat 226 is a leg-rest 236 which is mounted for movement from the stored position illustrated in FIG. 8 to various elevated leg-supporting positions, as illustrated in FIGS. 9 and 10. In this embodiment the leg-rest 236 is mounted for movement by means of a double four-bar leg-rest mounting linkage, generally designated by the reference numeral 238, which is interconnected between the seat 226 and the leg-rest 236. In that the details of the leg-rest mounting linkage are known per se and are subject to a latitude of modification, change and substitution in chairs according to the present invention, further description of the details of the double four-bar leg-rest mounting linkage 238 will be dispensed with in the interest of brevity. The leg-rest 236 is moved to the elevated leg-supporting position during the first movement phase by the provision of a direct actuating link 239 which has a pivotal mount 240 on the support and a pivotal connection 241 to one of the links of the double four-bar mounting linkage 238 which is pivotally mounted on the seat 236.

Operatively connected between the support 212 and the seat 226 is a control means which is effective to achieve coordinated inclining movement of the seat 226 in response to and as a function of the reclining movement of the back-rest 224. The control means include a first guiding link 244 which is disposed in an upwardly and forwardly inclined position from its lower end to its upper end, as illustrated in FIG. 8. A lost motion means operatively connects the first guiding link 244 to the seat 226. In this illustrative embodiment of the invention, the lost motion means takes the form of a pin 246 fixed to the seat and confined within an elongated slot 248 formed in the first guiding link 244 adjacent the upper and forward end thereof. The lower and rearward ends of the first guiding link 244 has a pivotal mount 250 on the support, the pivotal mount 250 being provided through a bracket fixed to the adjacent side wall of the support 212. The front guiding link is effective during movement of the body-supporting means 224, 226 from the upright or sitting position of FIG. 8 to the intermediate tilted sitting position shown in FIG. 9 to impart a first inclination to the seat 226, with the pin 246 remaining at the lower end of the slot 248.

The control means further includes a second guiding link 254 which is disposed in an upwardly and forwardly inclined position from its lower end to the upper end. The second guiding link 254 is operatively connected via a lost motion means to the seat 226. The lost motion means takes the form of a pin 256 fixed to the seat 226 and confined within an elongated slot 258 formed in the upper and forward end of the second guiding link 254. The lower and rearward end of the second guiding link 254 has a pivotal mount 260 on the support via the bracket 252 at a point spaced from the pivotal mount 250.

The second lost motion means 256, 258 provides for a lost motion travel between the second guiding link 254 and the seat 226 as the body-supporting means 224, 226 moves into the intermediate tilted sitting position of FIG. 9. Thereafter the second guiding link 254 is effective during the second movement phase as the body-supporting means moves from the intermediuate tilted sitting position of FIG. 9 to a reclining position of FIG. 10 to impart a second inclination to the seat. The first lost motion means 246, 248 provides for a lost motion travel between the first guiding link 244 and the seat 226 as the body-supporting means 224, 226 moves from the intermediate tilted sitting position into the reclining position.

In order to facilitate a more thorough understanding of this embodiment of the present invention, a typical sequence of operation will be described, making progressive reference to FIGS. 8 to 10 inclusive:

As the chair occupant leans against the back-rest 224,

the back-rest begins to translate rearwardly about the back-rest pivot 228 which in turn causes the seat 226 to move rearwardly. The first guiding link 244 turns in the counterclockwise direction through an upward and rearward arc about the pivotal mount 250, with the pin 246 remaining at the lower end of the slot 248 to impart a first inclination to the seat 226. Concurrently there is a lost motion travel of the pin 256 in the slot 258 of the second guiding link 254 (see FIGS. 8 and 9). Preferably, the inclination imparted to the seat by the first guiding link 244 during the first movement phase between the upright or sitting position of FIG. 8 and the intermediate tilted sitting position of FIG. 9 is such that there is relatively no angular displacement between the back-rest 224 and the seat 226. As the seat 226 moves rearwardly, the pivotal mount of the leg-rest linkage 238 on the seat 226 translates relative to the direct actuating link 239 to bring about the necessary extension of the leg-rest 236 to the elevated leg-supporting position. When the leg-rest arrives at the elevated leg-supporting position in the intermediate tilted sitting position of FIG. 9, the pin 256 of the second lost motion means is at the lower end of the slot 258. Thereafter continued application of pressure against the back-rest 224 will cause a lost motion travel of the pin 246 in the slot 248 of the first guiding link 244, with the second guiding link 254 taking over and imparting a second inclination to the seat 226 during the second movement phase from the intermediate tilted position of FIG. 9 to the fully reclining position of FIG. 10. During the second movement phase, the action of the guiding link 254 on the seat 226 is such that the angle between the seat 226 and the back-rest 224 opens up or increases to establish the desired position for supporting the body of the chair occupant in the fully reclined position of FIG. 10. Further, it is to be noted that during the second movement phase there is a continued elevation of the leg-rest 236 such that the leg-rest is in an appropriate elevated leg-supporting position in relation to the seat 226.

Referring now specifically to FIGS. 11 to 13, there is shown a still further embodiment of reclining chair 310 embodying features of the present invention which include a support 312 having opposite side walls 314, 316 interconnected by appropriate cross braces 318, 320 and supported on depending legs 322. Movably mounted on the support is a body-supporting unit which includes a back-rest 324 and a seat 326. Specifically, the back-rest 324 is mounted for reclining movement about a back-rest pivot 328 at the upper end of a bracket 329 extending longitudinally of and secured to the lower end of the back-rest. The back-rest pivot 328 is appropriately journaled on the side walls onto the support 312 at a point spaced above the lower end of the back-rest. The seat 326 rests on the cross brace 318 and is mounted for inclining movement as a function of and in response to the reclining movement of the back-rest 324 by the provision of rearwardly directed hanger links 330 which have plural rigid connections 332 at spaced locations along their length to the seat 326 and a pivotal connection 334 at its rearward end to the lower end of the back-rest 324 at a point spaced below the back-rest pivot 328.

Disposed beneath the forward end of the seat 326 is a leg-rest (not shown) which is mounted for movement from a stored position to various elevated leg-supporting positions as disclosed and described in the previous embodiments. In that the details of the leg-rest and its mounting and actuating means are known per se and are subject to a latitude of modification, change and substitution in chairs according to the present invention, detailed description is dispensed within the interest of brevity.

Operatively connected between the support 312 and the seat 326 is a control means which is effective to achieve coordinated inclining movement of the seat 326 in response to and as a function of the reclining movement of the back-rest 324. The control means include a first guiding link 344 which is disposed in an upwardly and rearwardly inclined position and rests against the cross brace 320, as illustrated in FIG. 11. A lost motion means operatively connects the first guiding link 344 to the seat 326. In this illustrative embodiment of the invention, the lost motion means takes the form of a pin 346 fixed to the seat and confined within an elongated slot 348 formed in the first guiding link 344 adjacent the upper and rearward end thereof. The lower and forward end of the first guiding link 344 has a pivotal mount 350 on the support. The pivotal mount is provided through a bracket 352 fixed direct to the adjacent side wall of the support 312. The front guiding link turns forwardly and is effective during movement of the body-supporting means 324, 326 from the upright or sitting position of FIG. 11 to the intermediate tilted sitting position shown in FIG. 12 to impart a first inclination to the seat 326.

The control means further includes a second guiding link 354 which is disposed in a downwardly and rearwardly inclined position from its upper end to its lower end. The second guiding link 354 is operatively connected at its lower end via a lost motion means to the seat 326. The lost motion means takes the form of a pin 356 fixed to the seat 326 and confined within an elongated slot 358 formed in the lower and rearward end of the second guiding link 354. The upper and forward end of the second guiding link has a pivotal mount 360 on the support 312 via the bracket 362 at a point spaced from the pivotal mount 350. The second lost motion means 356, 358 provides for a lost motion travel between the second guiding link 354 and the seat 326 as the body-supporting means 324, 326 moves into the intermediate tilted position (see FIG. 12). Thereafter, the second guiding link 354 is effective during the second movement phase as the body-supporting means moves from the intermediate tilted sitting position to a reclining position to impart a second inclination to the seat. The lost motion means 346, 348 provides for a lost motion travel between the first guiding link 344 and the seat 326 as the body supporting means 324, 326 moves from the intermediate tilted sitting position into the reclining position (see FIG. 13).

In order to facilitate a more thorough understanding of this embodiment for the present invention, a typical sequence of operation will be described, making progressive reference to FIGS. 11 to 13 inclusive:

As the chair occupant moves against the back-rest 324, the back-rest begins to translate rearwardly about the back-rest pivot 328 which in turn causes the seat 326 to move forwardly. The first guiding link 344 turns in the counter-clockwise directions through an upward and forward arc about the pivotal mount 350, with the pin 346 remaining at the lower end of the slot 348, and imparts a first inclination to the seat 326. Concurrently there is a lost motion travel of the pin 356 in the slot 358 of the second guiding link 354 (see FIGS. 11 and 12). Preferably the inclination imparted to the seat by the first guiding link 344 during the first movement phase between the upright or sitting position of FIG. 11 and the intermediate tilted sitting position of FIG. 12 is such that there is relatively no angular displacement between the back-rest 324 and the seat 326. When the leg-rest (not shown) arrives at the elevated leg-supporting position and the intermediate tilted position is established, the pins 356 of the second lost motion means are at the forward end of the slot 358. Thereafter continued application of pressure against the back-rest will cause a lost motion travel of the pin 346 in the slot 348 of the first guiding link 344, with the second guiding link 354 taking over and imparting a second inclination to the seat 326 during the second movement phase from the intermediate tilted sitting position of FIG. 12 to the fully reclining position of FIG. 13. During the second movement phase the

guiding action on the seat 326 is such that the angle between the seat 326 and the back-rest 324 opens up or increases to establish the desired attitude for the chair occupant in the fully reclined position of FIG. 13.

From the foregoing it will be appreciated that in the several illustrative forms of the present invention, the first guiding means imparts a first inclination to the body-supporting unit during the first movement phase with a lost motion travel between the second guiding means and either the seat or the support. Specifically, such lost motion travel may be provided by incorporating the lost motion means between the second guiding means and the support or by incorporating the lost motion means between the second guiding link and the seat.

During the second movement phase, the second guiding means takes over to impart a different inclination to the seat, while there is a lost motion travel between the support and one of the first guiding means and the seat. Here again the lost motion means may either be provided between the second guiding means and the support or between the second guiding means and the seat.

A latitude of modification, change and substitution is intended in the foregoing disclosure and in some instances some features of the invention will be employed without a corresponding use of other features. Accordingly it is appropriate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein.

What I claim is:

1. An improved reclining chair comprising a support, body-supporting means including a seat and back-rest mounted on the support for inclining and reclining movement respectively, and control means operatively connected between said support and said seat for effecting coordinated inclining movement of the seat in response to reclining movement of the back-rest, said control means including a first guiding means, a first lost motion means operatively connecting said first guiding means to one of said seat and support, means including a first pivot operatively connecting said first guiding means to the other of said seat and said support, said first guiding means being effective during movement of said body-supporting means into an intermediate tilted sitting position to impart a first inclination to said seat, second guiding means, a second lost motion means operatively connecting said second guiding means to one of said seat and said support, and means including a second pivot operatively connecting said second guiding means to the other of said seat and said support, said second lost motion means providing a lost motion travel between said support and one of said second guiding means and said seat as said body-supporting means moves into said intermediate tilted sitting position, said second guiding means being effective during movement of said body-supporting means into a reclined position to impart a second inclination to said seat, said first lost motion means providing a lost motion travel between said support and one of said first guiding means and said seat as said body-supporting means moves into said reclined position, both said first and second guiding means moving relative to said support as said body-supporting means moves into said intermediate tilted sitting position and into said reclined position.

2. An improved reclining chair comprising a support, body-supporting means including a seat and back-rest mounted on the support for inclining and reclining movement respectively, and control means operatively connected between said support and said seat for effecting coordinated inclining movement of the seat in response to reclining movement of the back-rest, said control means including a first guiding means, a first lost motion means operatively connecting said first guiding means to said support, means including a first pivot operatively connecting said first guiding means to said seat, said first guiding means being effective during movement of said body-supporting means into an intermediate tilted sitting position to impart a first inclination to said seat, second guiding means, a second lost motion means operatively connecting said second guiding means to said support, and means including a second pivot operatively connecting said second guiding means to said seat, said second lost motion means providing a lost motion travel between said support and said second guiding means as said body-supporting means moves into said intermediate tilted sitting position, said second guiding means being effective during movement of said body-supporting means into a reclined position to impart a second inclination to said seat, said first lost motion means providing a lost motion travel between said support and said first guiding means as said body-supporting means moves into said reclined position, both said first and second guiding means moving relative to said support as said body-supporting means moves into said intermediate tilted sitting position and into said reclined position.

3. An improved reclining chair comprising a support, body-supporting means including a seat and back-rest mounted on the support for inclining and reclining movement respectively, and control means operatively connected between said support and said seat for effecting coordinated inclining movement of the seat in response to reclining movement of the back-rest, said control means including a first guiding means, a first lost motion means operatively connecting said first guiding means to said seat, means including a first pivot operatively connecting said first guiding means to said support, said first guiding means being effective during movement of said body-supporting means into an intermediate tilted sitting position to impart a first inclination to said seat, second guiding means, a second lost motion means operatively connecting said second guiding means to said seat, and means including a second pivot operatively connecting said second guiding means to said support, said second lost motion means providing a lost motion travel between said support and said seat as said body-supporting means moves into said intermediate tilted sitting position, said second guiding means being effective during movement of said body-supporting means into a reclined position to impart a second inclination to said seat, said first lost motion means providing a lost motion travel between said support and said seat as said body-supporting means moves into said reclined position, both said first and second guiding means moving relative to said support as said body-supporting means moves into said intermediate tilted sitting position and into said reclined position.

4. An improved reclining chair comprising a support, body-supporting means including a seat and back-rest mounted on the support for inclining and reclining movement respectively, control means operatively connected between said support and said seat for effecting coordinated inclining movement of the seat in response to reclining movement of the back-rest, said control means including a first guiding means, a first lost motion means operatively connecting said first guiding means to one of said seat and support, means including a first pivot operatively connecting said first guiding means to the other of said seat and said support, said first guiding means being effective during movement of said body-supporting means into an intermediate tilted sitting position to impart a first inclination to said seat, second guiding means, a second lost motion means operatively connecting said second guiding means to one of said seat and said support, and means including a second pivot operatively connecting said second guiding means to the other of said seat and said support, said second lost motion means providing a lost motion travel between said support and one of said second guiding means and said seat as said body-supporting means moves into said intermediate tilted sitting position, said second guiding means being effective during movement of said body-supporting means into a reclined

position to impart a second inclination to said seat, said first lost motion means providing a lost motion travel between said support and one of said first guiding means and said seat as said body-supporting means moves into said reclined position, both said first and second guiding means moving relative to said support as said body-supporting means moves into said intermediate tilted sitting position and into said reclined position, a leg-rest, means operatively connected to and mounting said leg-rest for movement to an elevated leg-supporting position, and control means for moving said leg-rest to said elevated leg-supporting position in response to movement of said body-supporting means into said intermediate tilted sitting position.

5. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, and control means operatively connected between said support and said seat for effecting coordinated movement of said seat in response to said reclining movement, said control means including a first guiding link operatively connected to said seat, first lost motion means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, said first guiding link turning about said first pivot as said body-supporting unit moves into an intermediate tilted sitting position to impart a first inclination to said seat, a second guiding link operatively connected to said seat, second lost motion means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link turning about said second pivot as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating relative to said first pivot as said body-supporting unit moves into said reclined position.

6. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link operatively connected to said seat, first lost motion means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, means operatively connected to said leg-rest and to said body-supporting unit for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into an intermediate tilted sitting position, said first guiding link turning about said first pivot as said body-supporting unit moves into said intermediate tilted sitting position to impart a first inclination to said seat, a second guiding link operatively connected to said seat, second lost motion means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link turning about said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link turning about said second pivot as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating relative to said first pivot as said body-supporting unit moves into said reclined position.

7. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, a leg-rest and a combined seat and leg-rest control means operatively connected between said support, said seat and said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link pivotally connected to said seat, first lost motion means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, means operatively connected to said leg-rest and responsive to turning of said first guiding link for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into an intermediate tilted sitting position, said first guiding link turning about said first pivot as said body-supporting unit moves into said intermediate tilted sitting position to impart a first inclination to said seat, a second guiding link pivotally connected to said seat, second lost motion means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, said second guiding ling turning about said second pivot as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating rearwardly relative to said first pivot as said body-supporting unit moves into said reclined position.

8. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link pivotally connected to said seat, first lost motion means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, means operatively connected to said leg-rest and responsive to turning of said first guiding link for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into an intermediate tilted sitting position, said first guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into said intermediate tilted sitting position to impart a first inclination to said seat, a second guding link pivotally connected to said seat, second lost motion means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating rearwardly relative to said first pivot as said body-supporting unit moves into said reclined position.

9. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and

said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link pivotally connected to said seat and having a first elongated guideway formed therein, first pivot means on said support engaging one end of said guideway and providing a first stationary pivot about which said first guiding link turns as said body-supporting unit moves into an intermediate tilted sitting position, means operatively connected to said leg-rest and responsive to turning of said first guiding link for moving said leg-rest in to an elevated leg-supporting position as said body-supporting unit moves into said intermediate tilted sitting position, said first guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into said intermediate tilted sitting position to impart a first inclination to said seat, a second guiding link pivotally connected to said seat and having a second enlognated guideway formed therein, and second pivot means on said support engaging one end of said guideway, said second guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position with said second pivot engaging the other end of said guideway, said second guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said reclined position.

10. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest, means pivotally mounting said back-rest on said support for reclining movement, means pivotally mounting said seat directly on said back-rest for inclining movement, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link pivotally connected to said seat and having a first elongated guideway formed therein, first pivot means on said support engaging the upper end of said guideway and providing a first stationary pivot about which said first guiding link turns as said body-supporting unit moves into an intermediate tilted sitting position, means operatively connected to said leg-rest and responsive to turning of said first guiding link for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into said intermediate tilted sitting position, said first guiding link being disposed in a forwardly inclined positon and moving through a rearward and upward arc about said first pivot as said body-supporting unit moves into said intermediate tilted sitting position to impart a first inclination to said seat, a second guiding link pivotally connected to said seat and having a second elongated guideway formed therein, second pivot means on said support engaging the lower end of said guideway, said second guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position with said second pivot engaging the upper end of its guideway, said second guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating rearwardly relative to said first pivot as said body-supporting unit moves into said reclined position with said first pivot engaging the lower end of its guideway.

11. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest, means pivotally mounting said back-rest on said support for reclining movement, link means pivotally mounting said seat on said back-rest for inclining movement, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link pivotally connected to said seat and having a first elongated guideway formed therein, first pivot means on said support engaging the upper end of said first guideway and providing a first stationary pivot about which said first guiding link turns as said body-supporting unit moves into an intermediate tilted sitting position, means operatively connected to said leg-rest and responsive to turning of said first guiding link for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into said intermediate tilted sitting position, said first guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into said intermediate tilted sitting position to impart a first inclination to said seat, a second guiding link pivotally connected to said seat and having a second elongated guideway formed therein, second pivot means on said support engaging the lower end of said second guideway, said second guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position with said second pivot engaging the upper end of said second guideway, said second guiding link being disposed in a forwardly inclined position and moving through a rearward and upward arc as said body-supporting unit moves into a reclined position to impart a second inclination to said seat, said first guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said reclined position, a third guiding link pivotally connected to said support and having a third elongated guideway formed therein, and third pivot means on said seat engaging the lower end of said third guideway, said third pivot means translating relative to said third guiding link as said body-supporting unit moves into said reclined position.

12. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link pivotally connected to said seat, means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, means operatively connected to said leg-rest and responsive to turning of said first guiding link for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into an intermediate tilted sitting position, said first guiding link turning about said first pivot in response to said reclining movement such that said body-supporting unit moves into an intermediate tilted sitting position with said first guiding link imparting a first inclination to said seat, a second guiding link pivotally connected to said seat, means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating rearwardly relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, means for blocking said second guiding link against rearward translation when said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link when blocked against rearward translation turning about said second pivot in response to said reclining movement such that said body-

supporting unit moves into a reclined position with said second guiding link imparting a second inclination to said seat, said first guiding link translating rearwardly relative to said first pivot as said body-supporting unit moves into said reclined position, and means for blocking said first guiding link against rearward translation when said body-supporting unit moves into said reclined position.

13. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, and control means operatively connected between said support and said seat for effectively coordinated movement of said seat in response to said reclining movement, said control means including a first guiding link operatively connected to said seat, means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, said first guiding link turning about said first pivot in response to said reclining movement such that said body-supporting unit moves into an intermediate tilted sitting position with said first guiding link imparting a first inclination to said seat, a second guiding link operatively connected to said seat, means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, means for blocking said second guiding link against translation when said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link when blocked against translation turning about said second pivot in response to said reclining movement such that said body-supporting unit moves into a reclined position with said second guiding link imparting a second inclination to said seat, said first guiding link translating relative to said first pivot as said body-supporting unit moves into said reclined position, and means for blocking said first guiding link against translation when said body-supporting unit moves into said reclined position.

14. An improved reclining chair of the double movement type comprising a support, a body-supporting unit including a seat and back-rest mounted on said support for inclining and reclining movement respectively, a leg-rest, and a combined seat and leg-rest control means operatively connected between said support, said seat and said leg-rest for effecting coordinated movement of said seat and leg-rest in response to said reclining movement, said control means including a first guiding link, means mounting said first guiding link on said support for turning movement about a first pivot and for translating movement relative to said first pivot, means operatively connected to said leg-rest and to said body-supporting unit for moving said leg-rest into an elevated leg-supporting position as said body-supporting unit moves into an intermediate tilted sitting position, said first guiding link turning about said first pivot in response to said reclining movement such that said body-supporting unit moves into said intermediate tilted sitting position with said first guiding link imparting a first inclination to said seat, a second guiding link, means mounting said second guiding link on said support for turning movement about a second pivot and for translating movement relative to said second pivot, said second guiding link translating relative to said second pivot as said body-supporting unit moves into said intermediate tilted sitting position, means for blocking said second guiding link against translation when said body-supporting unit moves into said intermediate tilted sitting position, said second guiding link when blocked against translation turning about said second pivot in response to said reclining movement such that said body-supporting unit moves into a reclined position with said second guiding link imparting a second inclination to said seat, said first guiding link translating relative to said first pivot as said body-supporting unit moves into said reclined position, and means for blocking said first guiding link against translation when said body-supporting unit moves into said reclined position.

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