Jan. 27, 1959 J. LUCKHARDT 2,870,822

ARTICLE OF REPOSE FOR SUPPORTING THE BODY OF A PERSON

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Fig. 1.

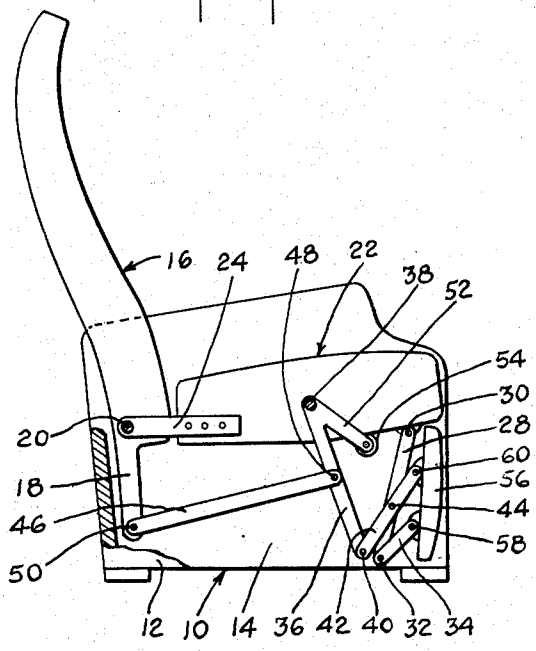
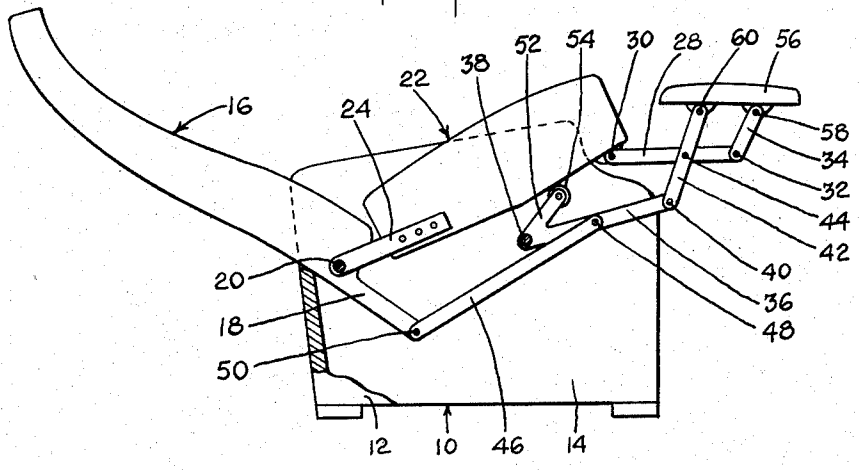


Fig. 2.



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Fig. 3.

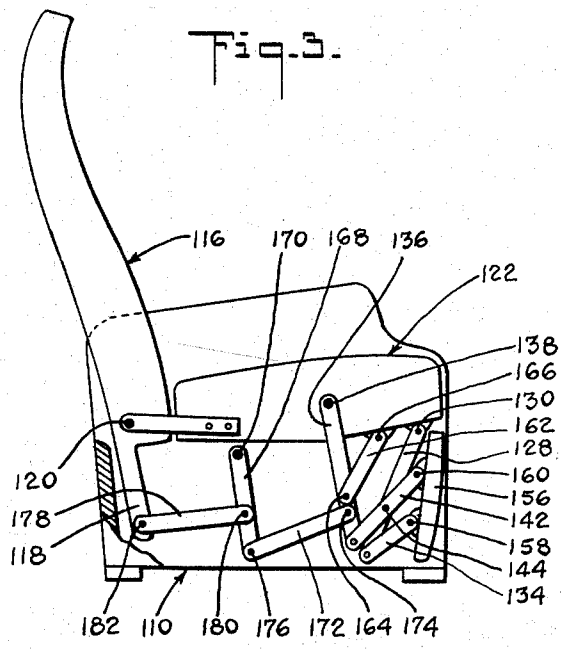
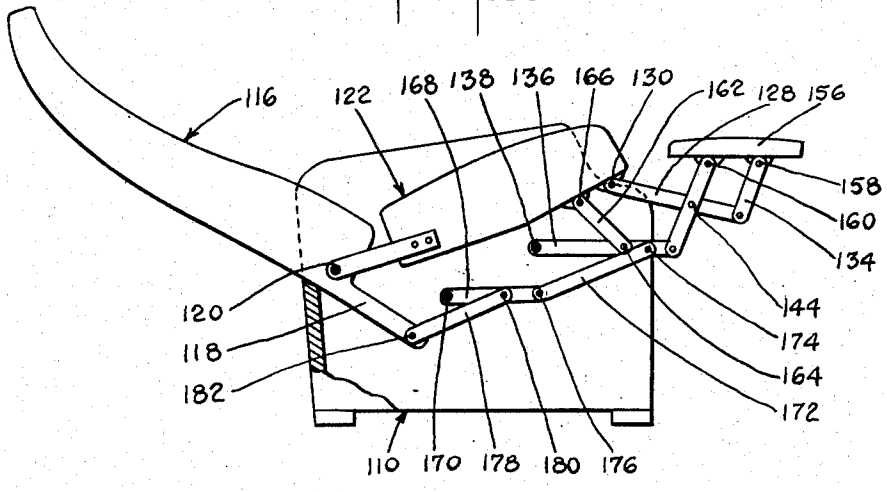


Fig. 4.



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ARTICLE OF REPOSE FOR SUPPORTING THE BODY OF A PERSON

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Fig. 5.

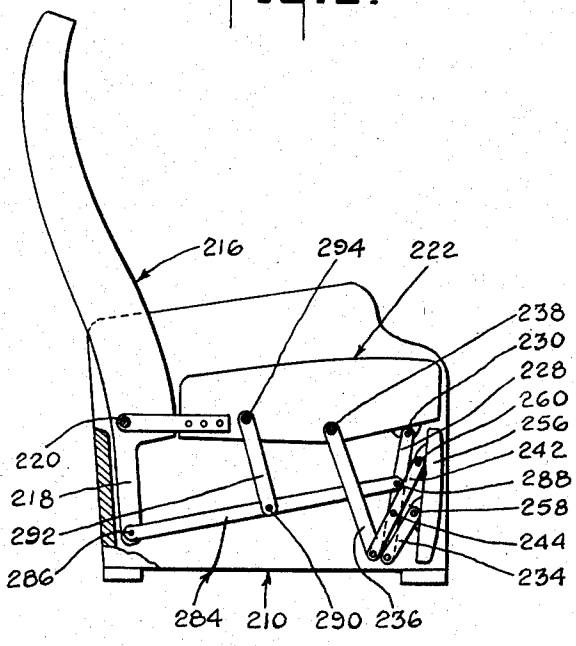
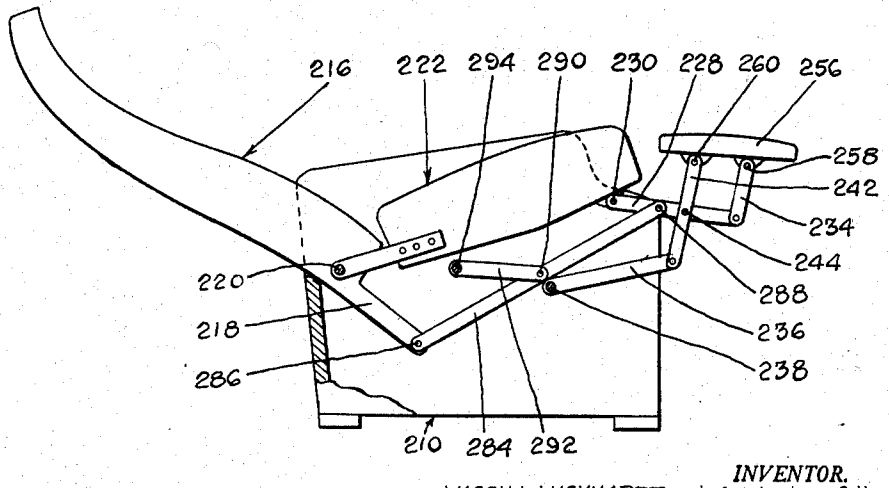


Fig. 6.



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THE BODY OF A PERSON

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Fig. 7.

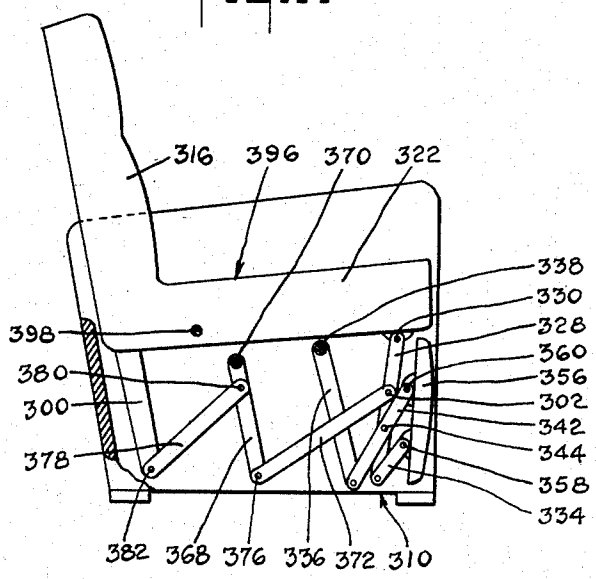
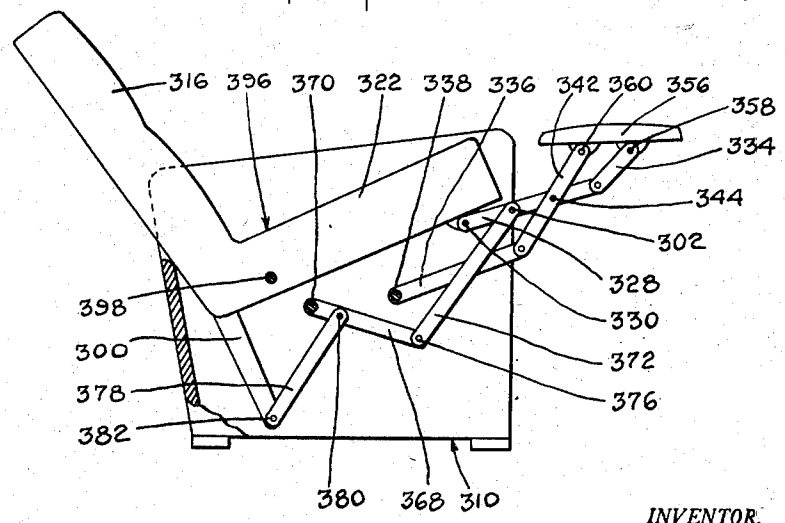


Fig. 8.



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United States Patent Office 2,870,822
Patented Jan. 27, 1959

2,870,822

ARTICLE OF REPOSE FOR SUPPORTING THE BODY OF A PERSON

Johannes Luckhardt, deceased, late of Berlin-Dahlem, Germany, by Wassili Luckhardt, administrator, Berlin-Dahlem, Germany, assignor to Anton Lorenz, Boynton Beach, Fla.

Application March 1, 1955, Serial No. 491,400

5 Claims. (Cl. 155—106)

This invention relates to articles of furniture, and more particularly to articles of repose for supporting the body of a person wherein a seat and back-rest are movable relative to a support and wherein a leg-rest is arranged which is propelled forwardly and upwardly during a movement of the seat and the back-rest from a sitting position into a reclined position.

An object of the invention is to provide an article of repose of above described type with an advantageous mechanism for controlling the movements of the leg-rest.

Another object of the invention is to improve on the construction of articles of repose for supporting the body of a person as now customarily made.

Other objects and structural details of the invention will be apparent from the following description when read in conjunction with the accompanying drawings forming part of this specification, wherein:

Figs. 1 and 2 are side elevational views of a reclining armchair according to the invention, a portion of a side frame being broken away, the movable elements of the chair being shown in the sitting position and reclining position respectively,

Figs. 3 and 4 are side elevational views of another embodiment of a reclining armchair according to the invention, a portion of a side frame being broken away, the movable elements of the chair being shown in the sitting position and reclined position respectively,

Figs. 5 and 6 are side elevational views of a further embodiment of a reclining armchair according to the invention, a portion of a side frame being broken away, the movable elements of the chair being shown in the sitting position and reclined position respectively, and

Figs. 7 and 8 are side elevational views of still another embodiment of a reclining armchair according to the invention, a portion of a side frame being broken away, the movable elements of the chair being shown in the sitting position and reclined position respectively.

Referring now to Figs. 1 and 2, **10** generally indicates a support comprising two side frames **12** and **14** connected with each other in suitable manner.

A back-rest generally indicated by **16**, having a downward extension **18** is swingably mounted on the support **10** at **20**.

A seat generally indicated by **22** is provided with bars **24** on each of its sides, only one bar being shown. Said bars **24** being rigidly connected with the frame of seat **22** by screws or the like are swingably mounted on the support **10** at **20** in coaxial alignment with the pivotal connection between the back-rest **16** and the support **10**.

On each side of the chair the upper end of a first link **28** is pivoted to the front portion of the seat **22** at **30**. The lower end of said first link **28** is pivoted at **32** to one end of a second link **34**. The upper end of a third link **36** is swingably mounted on the support **10** at **38**. The lower end of said third link **36** is pivoted at **40** to a fourth link **42**. Said fourth link **42** and the above mentioned first link **28** are pivotally connected with each other at **44** at a point intermediate the ends thereof.

One end of a connecting link **46** is pivoted to the third link **36** at **48**. The other end of said connecting link **46** is pivoted to the downward extension **18** of the back-rest **16** at **50**.

An arm **52** rigid with the upper end of the third link **36** carries a roller **54**, which is in abutting engagement with the lower surface of the seat **22**.

A leg-rest **56** is pivoted to the second link **34** at **58** and to the fourth link **42** at **60**, the pivotal connections **58** and **60** being spaced from each other.

Upon a rocking movement of the back-rest **16** from the sitting position shown in Fig. 1 into the extreme reclined position shown in Fig. 2, the mechanism described above causes a rocking movement of the seat **22** about its pivot **20** and a forward and upward propelling of the leg-rest **56** from the position shown in Fig. 1 into the position shown in Fig. 2. As will be readily gathered from Fig. 2, the rear edge of the leg-rest **56** is somewhat spaced from the front edge of the seat **22** when the elements are in the sitting position whereby a comfortable support of the legs of a person resting on the chair is obtained.

According to the embodiment shown in Figs. 3 and 4, again the back-rest **116** and seat **122** are swingably mounted on the support **110** at **120**. Furthermore again a leg-rest **156** is pivoted at spaced points **158** and **160** to a link **134** of a first pair of links **128**, **134** and to a link **142** of a second pair of links **136**, **142**, the links **128** and **142** of said two pairs of links being pivotally connected with each other at **144** and the link **128** of the first pair of links **128**, **134** being pivoted to the seat **122** at **130**, and the link **136** of the second pair of links **136**, **142** being swingably mounted on the support **110** at **138**.

However the control of the movements of the seat **122** in dependence on movements of the link **136** is obtained by means of another link **162** pivoted to the link **136** at **164** and to the seat **122** at **166**.

Furthermore the movements of the two pairs of links **128**, **134** and **136**, **142** are controlled in dependence on movements of the back-rest **116** by means of a linkage comprising a link **168** swingably mounted on the support **110** at **170**, a link **172** pivoted to the link **136** at **174** and to the link **168** at **176**, and a link **178** pivoted to the link **168** at **180** and to the extension **118** of the back-rest **116** at **182**.

Owing to the mechanism described above, the seat **122** and the leg-rest **156** are positively moved from the sitting position shown in Fig. 3 into the reclined position shown in Fig. 4 during a movement of the back-rest **116** about its pivot **120** from the position shown in Fig. 3 into the position shown in Fig. 4.

According to the embodiment shown in Figs. 5 and 6, again the back-rest **216** and seat **222** are rockably mounted on the support **210** at **220**. Furthermore again the chair is provided with two pairs of links **228**, **234** and **236**, **242** of which the links **228** and **242** are pivotally connected with each other at **244** and of which the link **228** is pivoted to the seat **222** at **230** and the link **236** is swingably mounted on the support **210** at **238**. Moreover again the leg-rest **256** is pivoted to the links **234** and **242** at **258** and **260** respectively.

However a connecting link **284** pivoted at one of its ends to the downward extension **218** of the back-rest **216** at **286** has its other end pivoted to the link **228** of the first pair of links **228**, **234** at **288**. Said connecting link **284** is pivoted at **290** at a point intermediate its ends to the lower end of a guiding link **292**, the upper end of which is swingably mounted on the support **210** at **294**.

A swinging movement of the back-rest **216** around its pivot **220** from the sitting position shown in Fig. 5 into the reclined position shown in Fig. 6 results in a positive movement of the seat **222** and the leg-rest **256** from the

sitting position shown in Fig. 5 into the reclined position shown in Fig. 6.

According to the embodiment shown in Figs. 7 and 8, the back-rest **316** and seat **322** are rigid with each other so as to form a unit generally indicated by **396**. Said unit **396** is swingably mounted on the support **310** at **398**. A downward extension **300** is rigid with the unit **396**. Again the chair is provided with two pairs of links **328**, **334** and **336**, **342**. The links **328** and **342** of said two pairs of links are pivotally connected with each other at **344**. The link **328** is pivoted to the seat portion **322** of the unit **396** at **330**. The link **336** is swingably mounted on the support **310** at **338**.

A leg-rest **356** is pivoted to the links **334** and **342** at **358** and **360** respectively.

The movements of the two pairs of links **328**, **334** and **336**, **342** and of the leg-rest **356** in coordination with the rocking movements of the unit **396** are controlled by the linkage **378**, **368**, **372**. The link **368** of said linkage **378**, **368**, **372** is swingably mounted on the support **310** at **370**. The link **378** is pivoted to the extension **300** at **382** and to the link **368**, at **380**. The link **372** is pivoted to the link **368** at **376** and to the link **328** of the first pair of links **328**, **334** at **302**.

The mechanism described above provides for a positive movement of the leg-rest **356** from the sitting position shown in Fig. 7 into the reclined position shown in Fig. 8 during a rocking movement of the seat-back-rest unit **396** from the position shown in Fig. 7 into the position shown in Fig. 8.

Preferred embodiments of the invention have been described, but it is understood that this disclosure is for the purpose of illustration and that various changes in shape and proportion, as well as the substitution of equivalent elements for those herein shown and described may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

For example each of the embodiments shown in the drawings may be equipped with stops for limiting the sitting and extreme reclined positions respectively.

Furthermore locking means may be provided for locking the movable members of the chair in any desired position.

What is claimed is:

1. A reclining chair comprising a support, body-supporting means including a seat and a back-rest having a downward extension movably mounted on said support for movement between an upright sitting position and a rearwardly-inclined reclining position, a leg-rest, a first pair of links including a first and second link connected end to end, a second pair of links including a third and fourth link connected end to end, the first link being pivotally connected to and depending from the seat, the third link being pivotally connected to and depending from the support, the second and fourth links being operatively connected at spaced points to said leg-rest, said fourth link crossing over and being pivotally connected to an intermediate portion of said first link, a connecting link connected to an intermediate portion of one of said first and third links, a guiding link pivotally mounted on said support and pivotally connected to said connecting link, and means operatively connecting said guiding link to a downward extension of said back-rest for forward and upward movement of said guiding link and connecting link in response to rearward tilting movement of said back-rest, whereby said third link is pivoted forwardly and upwardly on said support to lift said fourth link and said leg-rest.

2. A reclining chair according to claim 1 in which said connecting means comprises a further link pivotally connected at one end to said downward extension of the back-rest and pivotally connected at its other end to a point on the guiding link above the pivotal connection of the guiding link to the connecting link.

3. A reclining chair according to claim 1 in which said connecting means comprises a rigid extension of said connecting link extending rearwardly of the pivotal connection of said guiding link to the connecting link and pivotally connected to said dowward extension of the back-rest.

4. A reclining chair comprising a support, body-supporting means including a seat and a back-rest pivotally mounted on said support for independent movement between an upright sitting position and a rearwardly-inclined reclining position, said back-rest having a downward extension, a leg-rest, a first pair of links including a first and second link connected end to end, a second pair of links including a third and fourth link connected end to end, the first link being pivotally connected to and depending from the seat, the third link being pivotally connected to and depending from the support, the second and fourth links being pivotally connected at spaced points to said leg-rest, said fourth link crossing over and being pivotally connected to an intermediate portion of said first link, a connecting link connected to an intermediate portion of said third link, a guiding link pivotally mounted on said support and pivotally connected to said connecting link, and a further link pivotally connected to said guiding link and to said downward extension of said back-rest for forward and upward movement of said guiding link and connecting link in response to rearward tilting movement of said back-rest, whereby said third link is pivoted forwardly and upwardly on said support to lift said fourth link and said leg-rest.

5. A reclining chair according to claim 4 in which a seat controlling link is pivotally connected to said third link and to said seat, said seat controlling link being lifted by said third link for raising said seat in response to rearward movement of the back-rest.

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