

May 1, 1956

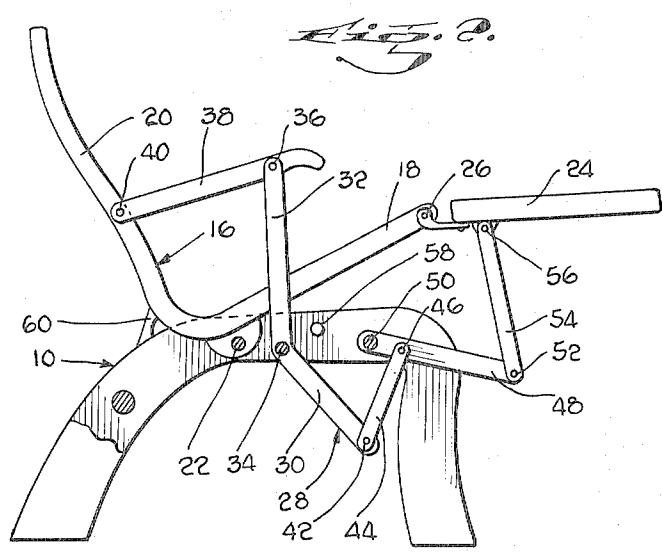
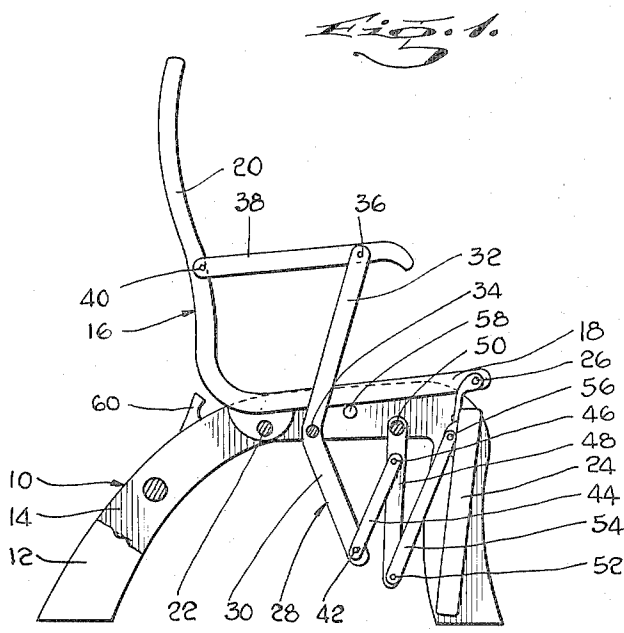
A. LORENZ

2,743,765

RECLINING ARTICLE OF FURNITURE

Filed Jan. 21, 1953

3 Sheets-Sheet 1



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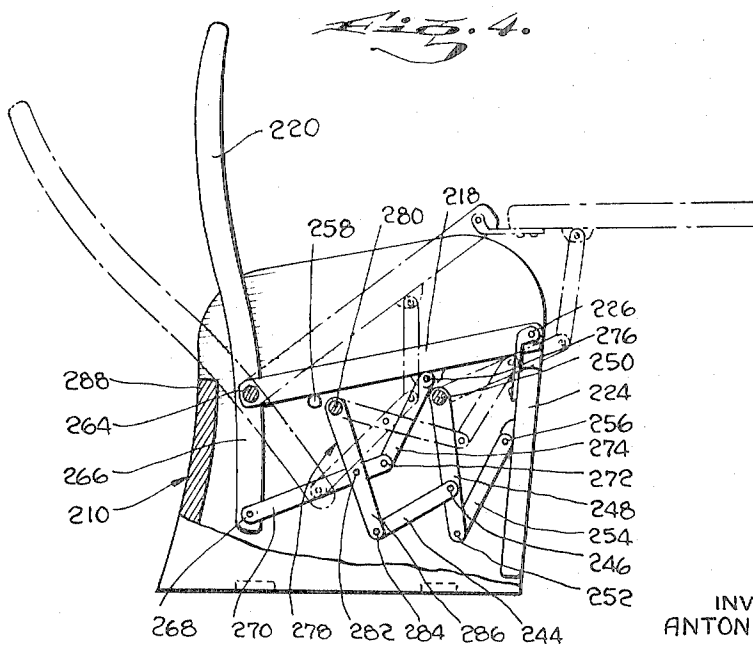
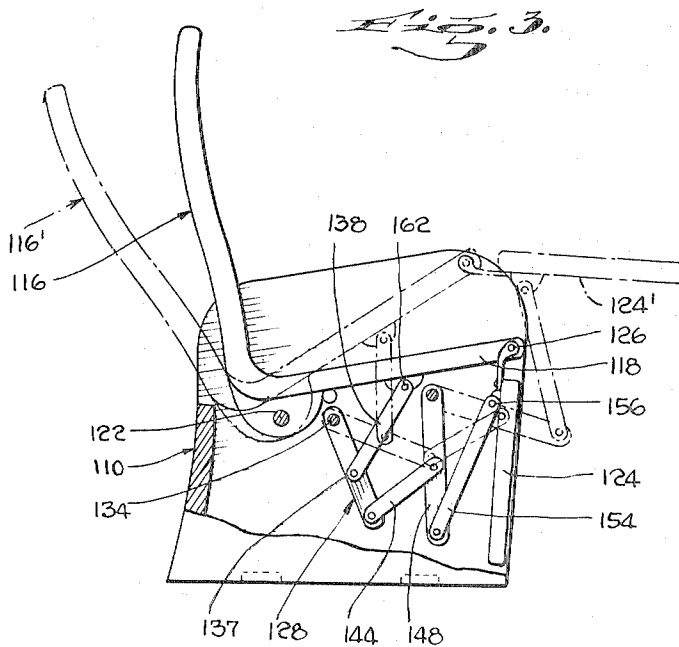
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3 Sheets-Sheet 2



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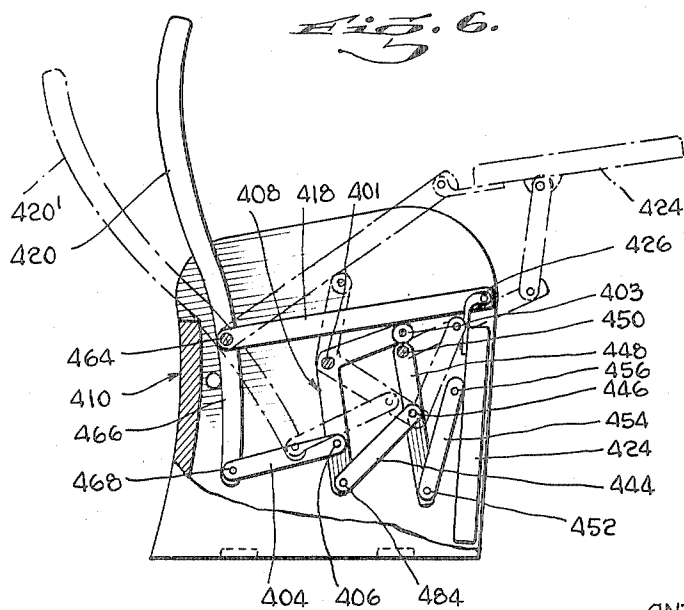
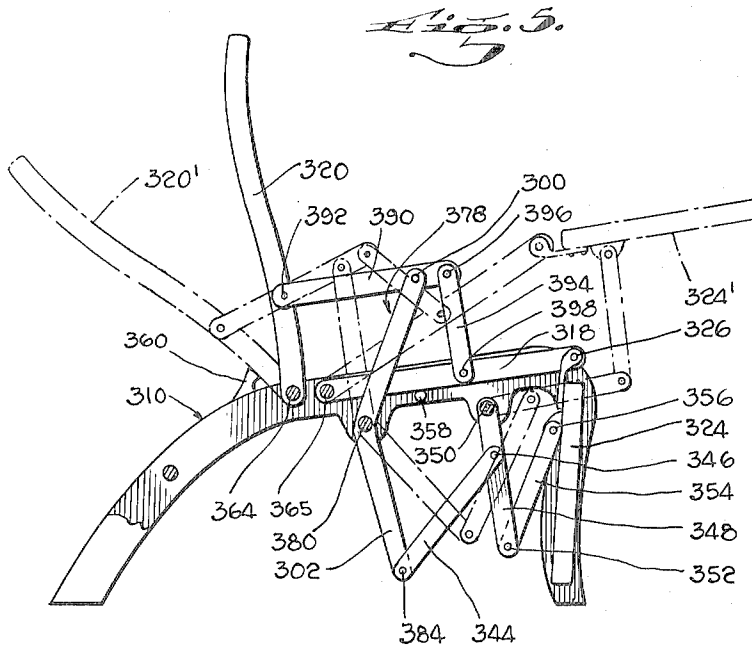
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RECLINING ARTICLE OF FURNITURE

Anton Lorenz, Buffalo, N. Y.

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17 Claims. (Cl. 155—106)

This invention relates to articles of furniture, and more particularly to an article of furniture, wherein a structure including a seat, a back-rest, and means connecting said back-rest with said seat is swingably mounted on a support.

An object of the present invention is to provide a controlling mechanism for a leg-rest swingably mounted on the seat of a reclining article of furniture of above described type, by means of which the leg-rest may be propelled forwardly and upwardly at a great initial speed, when the movable members of the article of furniture are swung from the sitting position into a reclined position.

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

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

Fig. 2 is a side elevational view of a chair shown in Fig. 1, wherein however the movable members of the chair are in the extreme reclined position,

Fig. 3 is a side elevational view of another embodiment of a reclining chair according to the invention, a portion of a side frame being broken away,

Fig. 4 is a side elevational view of a further embodiment of a chair according to the invention, a portion of a side frame being broken away,

Fig. 5 is a side elevational view of still another embodiment of a reclining chair according to the invention, a portion of a side frame being broken away, and

Fig. 6 is a side elevational view of a further embodiment of a reclining arm chair according to the invention, a portion of a side frame being broken away.

Referring now to Figs. 1 and 2, 10 generally indicates a support comprising side frames 12 and 14 connected with each other by transverse rods.

A unit 16 comprising a seat 18 and a back-rest 20 integral with each other is swingably mounted on the support 10 at 22. If desired, the unit could also be made of a seat and back-rest rigidly connected with each other by screws or the like.

A leg-rest 24 is swingably mounted on the front portion of the seat 18 at 26. The movements of the leg-rest 24 are controlled by the following mechanism in dependence on movements of the seat-back-rest unit 16.

A guiding element 28 having a lower arm 30 and an upper arm 32 is swingably mounted on the support 10 at 34. The upper arm 32 of said guiding element 28 is pivoted at 36 to the front end of a connecting link 38 forming an arm-rest. The rear end of said connecting link 38 is pivoted to the back-rest 20 at 40.

The lower arm 30 of the guiding element 28 is pivoted at 42 to one end of a controlling bar 44, the other end of which is pivoted at 46 to a controlling arm 48 swingably mounted on the support 10 at 50. The lower end of said controlling arm 48 is pivoted at 52 to the lower end of a

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controlling link 54, the upper end of which is pivoted to the leg-rest 24 at 56.

The sitting position of the movable members of the chair is limited by a stop 58 arranged on the support 10 for abutting engagement with the seat 18. When the unit 16 is swung about its pivot 22 from the sitting position shown in Fig. 1 into the extreme reclined position, limited by a stop 60 as shown in Fig. 2, the leg-rest 24 is propelled forwardly and upwardly by the controlling mechanism 38, 28, 44, 48, 54. Owing to the arrangement of the controlling mechanism as described above, the leg-rest is brought to a substantially horizontal position while the back-rest is only slightly reclined.

According to the embodiment shown in Fig. 3 again a seat-back-rest unit 116 is swingably mounted on a support 110 at 122. Furthermore the controlling mechanism for the leg-rest 124 swingably mounted on the seat 118 at 126 comprises a guiding element 128, a controlling bar 144, a controlling arm 148 and a controlling link 154 pivotally connected with each other in the same manner as the corresponding members of the chair shown in Fig. 1. The controlling link 154 is pivoted to the leg-rest 124 at 156 and the guiding element 128 is swingably mounted on the support 110 at 134. The connecting link 138 however is arranged between the seat 118 and the guiding element 128, one end of said connecting link 138 being pivoted to the seat 118 at 162, the other end of said connecting link 138 being pivoted to the guiding element 128 at 137.

When the unit 116 is swung about its pivot 122 into the reclined position 116', the leg-rest 124 is brought into the position 124' through the medium of above described controlling mechanism.

According to the embodiment shown in Fig. 4, the seat 218 and the back-rest 220 are swingably mounted on the support 210 at 264 in co-axial alignment with each other. The seat 218 and the back-rest 220 are movable relative to each other and relative to the support 210.

The back-rest 220 has a downward extension 266 pivotally connected at 268 with the rear end of a lower connecting link 270. The other end of said lower connecting link 270 is pivoted at 272 to one end of a front connecting link 274. The other end of which is pivoted to the seat 218 at 276. A guiding link 278 swingably mounted on the support 210 at 280 is pivoted to the lower connecting link 270 at 282. Thus the chair shown in Fig. 4 comprises a constrained linkage having a stationary link and a plurality of movable links, the stationary link being formed by the portion of the support 210 between the pivots 264 and 280 and the movable links including the seat 218, the extension 266 of the back-rest 220, the link chain 270, 274 and the guiding link 278.

The leg-rest 224 swingably mounted on the seat 218 at 226 is pivotally connected with the upper end of the controlling link 254 at 256. The lower end of said controlling link 254 is pivoted at 252 to a controlling arm 248 swingably mounted on the support 210 at 250. One end of a controlling bar 244 is pivoted to the controlling arm 256 at 246, the other end of said controlling bar 244 is pivoted at 284 to a downward extension 286 of the guiding link 278, said downward extension 286 projecting beyond the pivot 282 between the guiding link 278 and the connecting link 270.

The sitting position of the movable members of the chair is shown in full lines in Fig. 4, the extreme reclined position of said members is shown in dash and dot lines. The sitting position is limited by the stop 258 arranged on the support 210 for abutting engagement with the seat 218; the extreme reclined position is limited by the upper edge of the rear wall 288 of the support 210 engaging the back-rest 220.

According to the embodiment shown in Fig. 5, the back-rest 320 and the seat 318 are swingably mounted on the support 310 at spaced points 364 and 365 respectively. The rear end of an upper connecting link 390 is pivoted to the back-rest 320 at 392. The other end of said connecting link 390 is pivoted to a front connecting link 394 at 396. The lower end of said front connecting link 394 is pivoted to the seat 318 at 398. a guiding link 378 pivoted to the upper connecting link 390 at 390 is swingably mounted on the support 310 at 380. A downward extension 302 of said guiding link 378 projecting beyond the pivotal connection between said guiding link 378 and the support 310 is pivoted at 384 to one end of a controlling bar 344. The other end of said controlling bar 344 is pivoted at 346 to a controlling arm 348 swingably mounted on the support 310 at 350. The lower end of said controlling arm 348 is pivoted at 352 to one end of a controlling link 354. The other end of said controlling link 354 is pivoted at 356 to a leg-rest 324 swingably mounted on the seat 318 at 326.

The sitting position of the movable members of the chair, shown in full lines, is limited by a stop 338 arranged on the support 310. When the back-rest 320 is swung backward, for example into the extreme reclined position 320' limited by a stop 360, the leg-rest is brought into the position 324' shown in dash and dot lines through the medium of the mechanism described above.

According to the embodiment shown in Fig. 6, the back-rest 420 and the seat 418 are swingably mounted on the support 410 at the point 464. A downward extension 466 of the back-rest 420 is pivoted at 468 to the rear end of a connecting link 404, the other end of which is pivoted at 406 to a controlling element 408 being swingably mounted on the support 410 at 401 and having the shape of a bell-crank lever. The upper arm of said controlling element 408 carries a roller slidably engaged with the lower surface of the seat 418. The lower arm of the controlling member 408 is pivoted at 484 to one end of a controlling bar 444. The other end of said controlling bar 444 is pivoted at 446 to a controlling arm 448 swingably mounted on the support 410 at 450. The lower end of said controlling arm 448 is pivoted at 452 to the lower end of a controlling link 454, the upper end of which is pivoted at 456 to the leg-rest 424 swingably mounted on the seat 418 at 426.

The sitting position of the movable members of the chair is shown in full lines in Fig. 6. Upon a movement of the back-rest 420 into the reclined position 420', the seat and leg-rest are brought into the reclined position 418' and 424' respectively through the linkages described above.

I have described preferred embodiments of my invention, but it is understood that this disclosure is for the purpose of illustration, and that various omissions and changes in shape, proportion and arrangement of parts, as well as the substitution of equivalent elements for the arrangements shown and described may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

What I claim is:

1. An article of repose for supporting the body of a person, comprising: a support, a structure including a seat, a back-rest member, said back-rest member and said seat being interconnected for controlling movements in dependence on each other, said structure being swingably mounted on said support, a leg-rest swingably mounted on the front portion of said seat, a guiding element pivoted to said support, means between said guiding element and a member of said structure for effecting movements of said guiding element in coordination with said member of the structure, a controlling arm pivoted to said support, a controlling bar pivoted at one of its ends to said controlling arm, the other end of said controlling bar being pivoted to said guiding element, and means interposed between said controlling arm and said leg-rest for effect-

ing movement of the latter in coordination with said controlling arm.

2. In an article of repose as claimed in claim 1, said means interposed between the controlling arm and the leg-rest including a controlling link pivoted at one of its ends to said controlling arm and at its other end to said leg-rest.

3. An article of repose for supporting the body of a person, comprising: a support, a unit including a seat and a back-rest rigid with each other, said unit being swingably mounted on said support, a leg-rest swingably mounted on the front portion of said seat, a guiding element pivoted to said support, first means interposed between said guiding element and said unit for effecting movements of said guiding element in dependence on movements of said unit, a controlling arm pivoted to said support, a controlling bar pivoted at one of its ends to said controlling arm and at its other end to said guiding element, and second means interposed between said controlling arm and said leg-rest for effecting movement of the latter in coordination with said controlling arm.

4. In an article of repose as claimed in claim 3, said first means including a connecting link pivoted at one of its ends to said unit at a point remote from the swingable connection between said unit and said support and pivoted at its other end to said guiding element.

5. In an article of repose as claimed in claim 3, said first means including a connecting link pivoted at one of its ends to said back-rest and at its other end to said guiding element.

6. In an article of repose as claimed in claim 3, said first means including a connecting link pivoted at one of its ends to said seat and at its other end to said guiding element.

7. In an article of repose as claimed in claim 3, said second means including a controlling link pivoted at one of its ends to said controlling arm and at its other end to said leg-rest.

8. An article of repose for supporting the body of a person, comprising: a support, a constrained linkage having stationary link-means and a plurality of movable links, said stationary link-means being included in said support, said movable links including a seat member, a back-rest member, guiding means and a chain of connecting links including a first connecting link at one end of the chain and a front connecting link at the other end of the chain, said guiding means being connected to said support and engaged with at least one of said connecting links, said first connecting link being pivoted to the structure of said back-rest member, said front connecting link being pivoted to the front portion of the seat member, said stationary link means pivotally connecting at least one of said back-rest and seat members with said support, a leg-rest swingably mounted on the front portion of the seat member, a controlling arm pivoted to said support, a controlling bar pivoted at one of its ends to said controlling arm, the other end of said controlling bar being pivoted to a movable link of said constrained linkage, and means interposed between said controlling arm and said leg-rest for effecting movement of the latter in coordination with said controlling arm.

9. In an article of repose as claimed in claim 8, said means interposed between the controlling arm and the leg-rest including a controlling link pivoted at one of its ends to said controlling arm and at its other end to said leg-rest.

10. An article of repose for supporting the body of a person, comprising: a support, a constrained linkage having stationary link-means and a plurality of movable links, said stationary link-means being included in said support, said movable links including a seat member, a back-rest member, a guiding link and a chain of connecting links including a first connecting link at one end of the chain and a front connecting link at the other end of the chain, a portion of said guiding link being pivoted to said sup-

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port, another portion of said guiding link being connected with at least one of said connecting links, said first connecting link being pivoted to the structure of said back-rest member, said front connecting link being pivoted to the front portion of the seat member, said stationary link means pivotally connecting at least one of said back-rest and seat members with said support, a leg-rest swingably mounted on the front portion of the seat member, a controlling arm pivoted to said support, a controlling bar pivoted at one of its ends to said controlling arm, the other end of said controlling bar being pivoted to the structure of said guiding link, and means interposed between said controlling arm and said leg-rest for effecting movement of the latter in coordination with said controlling arm.

11. In an article of repose as claimed in claim 10, the structure of said guiding link including an extension projecting beyond its pivotal connection with the connecting link, and said controlling bar being pivoted to said extension of the guiding link.

12. In an article of repose as claimed in claim 10, the structure of said guiding link including an extension projecting beyond its pivotal connection with the support, and said controlling bar being pivoted to said extension of the guiding link.

13. An article of repose for supporting the body of a person, comprising: a support, a seat swingable on said support, a back-rest member swingable on said support, a controlling element pivoted to said support, a connecting link pivoted at one of its ends to said controlling element and at its other end to said back-rest member, first means interposed between said controlling element and said seat for effecting movement of the latter in coordination with said controlling element, a leg-rest swingably mounted on the front portion of said seat, a controlling arm pivoted to said support, a controlling bar pivoted at one of its ends to said controlling arm and at its other end to said controlling element, and second means interposed between said controlling arm and said leg-rest.

14. In an article of repose as claimed in claim 13, said second means interposed between the controlling arm and the leg-rest including a controlling link pivoted at one of its ends to said controlling arm and at its other end to said leg-rest.

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15. An article of repose for supporting the body of a person, comprising: a support, a seat swingable on said support, a back-rest member swingable on said support, a controlling element pivoted to said support, a connecting link pivoted at one of its ends to said controlling element and at its other end to said back-rest member, cooperating abutting means slidably engaged with each other arranged on said controlling element and said seat for effecting movement of the latter in coordination with said controlling element, a leg-rest swingably mounted on the front portion of said seat, a controlling arm pivoted to said support, a controlling bar pivoted at one of its ends to said controlling arm and at its other end to said controlling element, and second means interposed between said controlling arm and said leg-rest.

16. An article of repose for supporting the body of a person, comprising in combination: a support, body supporting means including a seat member and a back-rest member, said body supporting means being rockably mounted on said support, a guiding element pivoted to said support, means operatively engaging said guiding element and said body supporting means for interdependent movements, a controlling arm swingably mounted on said support at a point spaced from the pivotal connection between said guiding element and said support, a controlling bar pivoted at different points thereof to said controlling arm and to said guiding element, a leg-rest swingably mounted on the front portion of said seat, and means interposed between said controlling arm and said leg-rest for effecting movement of the latter in coordination with said controlling arm.

17. In an article of repose as claimed in claim 16, said means interposed between the controlling arm and the leg-rest including a controlling link pivoted at spaced points to said controlling arm and to said leg-rest.

References Cited in the file of this patent

UNITED STATES PATENTS

2,576,466	Lorenz	Nov. 29, 1951
2,613,727	Lorenz	Oct. 14, 1952