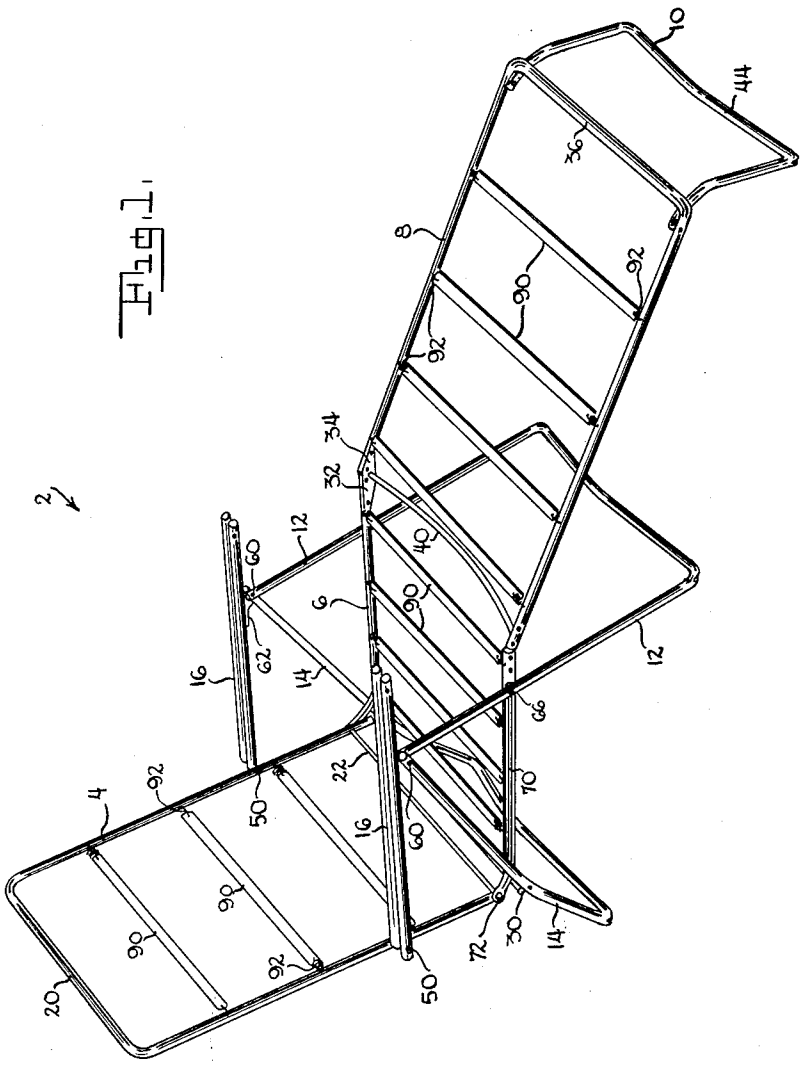
April 10, 1962 R. L. PANICCI 3,029,104

THREE PIECE CHAISE LOUNGE

Filed Feb. 10, 1960 3 Sheets-Sheet 1

FIG. 1



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Fig. 2.

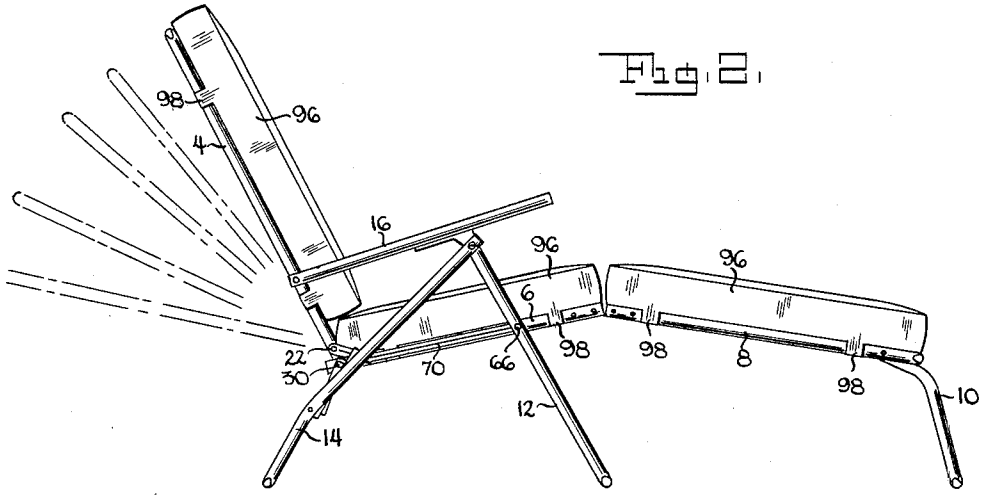


Fig. 3.

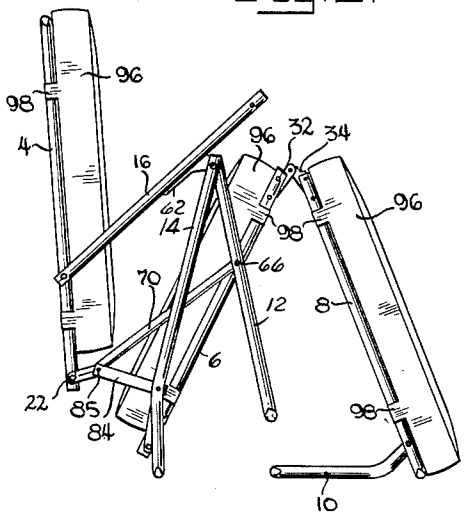
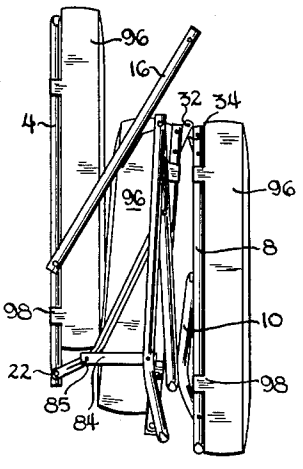


Fig. 4.



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Fig. 5.

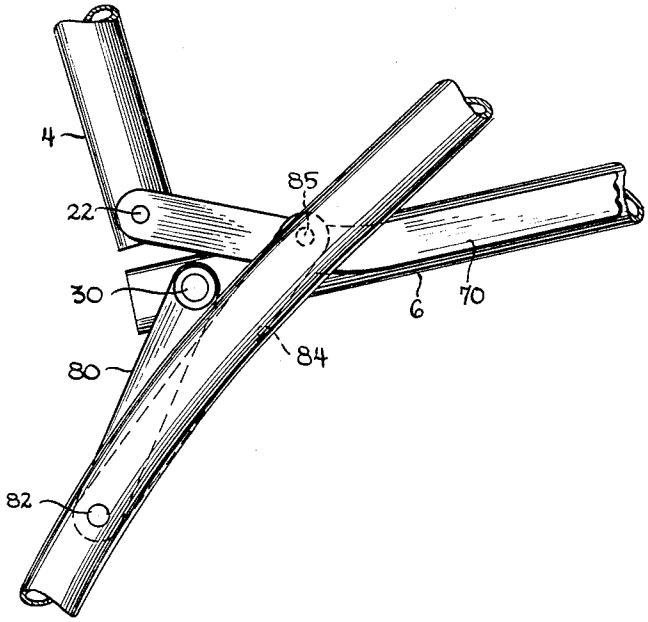


Fig. 7.

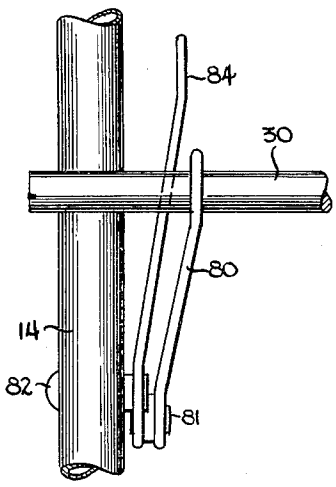
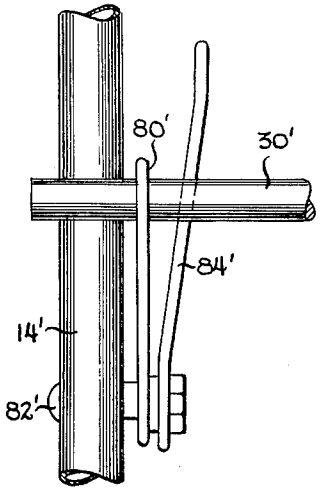


Fig. 6.



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THREE PIECE CHAISE LOUNGE

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Filed Feb. 10, 1960, Ser. No. 7,831
1 Claim. (Cl. 297—35)

The present invention relates to new and useful improvements in structural refinements in collapsible or folding furniture and is directed more particularly to the provision of a chair of the type which may be folded or collapsed with facility.

The invention resides in the particular arrangement, construction and relationship of the various elements, components and instrumentalities of the foldable or collapsible chair as exemplified in the detailed disclosure hereinafter set forth wherein the objects of the invention, as defined in the paragraphs below, will be apparent.

It is a principal object of the present invention to provide an inventively novel and improved construction of the type in which the chair may be easily folded or collapsed so as to be readily transported.

The frame or chassis of the chair may be largely of conventional construction. However, I provide an improved construction whereby back and seat cushions of substantial depth may be assembled conveniently with the collapsed frame for easy storage and transportation. I can also provide a leg rest, which has a leg cushion, which can also be conveniently assembled with the collapsed frame.

By means of this invention, the cushions can be thick and may optionally have inner coil springs, and said cushions can be easily assembled with the folded chair to be stored and shipped as a compact unit. As above noted, the invention may be embodied in chairs whose main parts are of any folding construction, and one type of folding construction is shown herein, in order to illustrate one complete embodiment, and without limitation thereto.

The invention accordingly embraces broadly the concept of a foldable or collapsible chair of the chaise lounge type and it will be helpful to an understanding of my invention to first briefly consider some of the more important features and aspects thereof, so that same may be kept in mind during the subsequent reading of the detailed description of the practical embodiment of my improvements and of the illustration thereof in the annexed drawing.

Another chief object of the invention is to construct a chair of the general character indicated and having a novel adjusting mechanism whereby the back-rest thereof may be inclined or adjusted to various angles thereby insuring a high degree of comfort to the user.

A salient feature of the invention lies in the provision of a chair having a leg-rest portion disposed forwardly of the seat, whereby the chair may be used as a lounging or reclining chair. The leg-rest portion may be easily removed as it is desired to use the chair as a deck chair.

Another feature is to provide a chair having cushions of sufficient body or thickness to insure comfort to the user, yet not being so bulky as to interfere in any way with the folding of the chair.

Another feature lies in the provision of a chair of the type described having a novel linkage connecting all of its members whereby the chair may be folded with ease.

Other of the chief objects and purposes hereof are to provide advantageous structural and operational features in a device of the class to which reference has been made so as to provide an apparatus having the following meritorious characteristics; first, a simplicity in construction

and compactness of design and therefore an adaptability to economical manufacture; second, a uniqueness in engineering design of coacting parts wherefor the components are coordinated for facile assembly; third, a susceptibility to easy installation with respect to the various purposes to which it is intended; fourth, a high degree of efficiency and dependability in its operational use; fifth, the attainment of a convenience of arrangement of parts and a flexibility or a capability of adjustment by which a large variety of work can be produced by means of the same device; sixth, the achievement of a greater ease in repairs and consequent reduction in maintenance costs than has been possible in related devices heretofore known; seventh, the provision of a construction which is well adapted to withstand the usage to which a chaise lounge is ordinarily subjected, and eighth, the provision of such other improvements in and relating to chaise lounges of the type above referred to as are hereinafter described and claimed.

Further objects hereof are to provide a chaise lounge conformable to the desiderata of the preceding paragraph and offering specific improvements in the various operating instrumentalities comprising same, which themselves are minimum in number, so that it is simple and compact in accordance with the demands and desires of manufacturers and purchasers alike and so as to provide distinct advantages in that it is distinctive in its appearance, practical in its value, durable in its organization, reliable in its operation, and efficient in its use.

These objects and other incidental ends and advantages, some of which will in part be obvious and apparent and some of which will in part be more fully pointed out in the progress of the disclosure, and to the end of attaining these and any other object and advantage hereinafter reasonably appearing, it will be explained that the invention consists substantially in the combination, construction, location and relative arrangement of parts, as described in detail hereinafter, as shown in the annexed drawings, and as defined with particularity in the appended claims forming a part hereof.

The protection which is sought for this invention is covered by the language of the specification and the spirit represented thereby and same is limited only by the prior art and the scope of the appended claims.

It will be apparent however that the physical embodiment delineated is only indicative of but one of the various ways, albeit the preferred exemplification, in which the principles of the invention may be employed and in which the component parts may be combined and arranged. Same is submitted as one best known embodiment of the invention in accordance with the patent statutes and is given with a view to illustrating and explaining the precise nature of the principles of the invention and their embodiment for practical use, in order that others skilled in the art may be enabled to adapt and modify them in numerous embodiments, variations and modifications, each as may be best adapted to the conditions of any particular use.

These above named objects and such other objects as appear from a perusal of the machine's description are obtained by the chaise lounge structure illustrated in the accompanying drawings wherein like characters of reference or remarks are employed to designate like or corresponding parts throughout the several views and in which:

FIG. 1 is a perspective view showing the frame of a folding chair in its normal or set-up or extended condition of use, with the cushions being omitted for convenience of illustration;

FIG. 2 is a side elevation of the chair shown in FIG. 1, with cushions in place, and illustrating by phanthom outline, various positions of adjustment of the back-rest;

FIG. 3 is a side elevational view of the chair in one stage of its collapsing or folding movement;

FIG. 4 is a side elevational view showing the chair fully collapsed;

FIG. 5 is an enlarged fragmentary side elevational view of the chair linkage;

FIG. 6 is a fragmentary rear elevational view of the linkage shown in FIG. 5; and

FIG. 7 is a fragmentary rear elevational view of a modified form of the linkage shown in FIG. 5.

With continued reference now to the drawings which illustrate a typical and preferred embodiment of the invention for the purpose of disclosure and form a part of this specification, I have shown a chaise lounge generally indicated by **2** and in which my invention may be advantageously incorporated.

The chair includes an inverted U-shaped back frame **4**, a seat frame **6**, a U-shaped leg-rest frame **8**, a U-shaped leg rest frame support **10**, U-shaped front and rear leg frames **12** and **14** respectively, and a pair of arm rests **16**.

It is contemplated that all frame members will be tubular in shape and will be formed from a light weight metal which may be shaped to any desired contours with facility.

The back frame or back rest **4** is a rigid, conventional U-shaped member and may comprise a pair of spaced parallel side bars, interconnected at their upper ends by a transverse cross or lateral bar designated as **20**.

A transverse rod member **22** extends between and connects the parallel side bars of the back frame **4** at their lower ends.

The seat frame **6** may comprise a pair of longitudinal and spaced parallel side bars interconnected at their rearmost extremities to a conventional rear rigid lateral or transversely extending pivot bar **30**. Each said side bar is pivotally connected at its foremost extremity to the rearmost extremity of the adjacent side bar of the leg rest frame **8** by means of lugs **32** which are fixed to and depend from the side bars of the seat frame **6** and lugs **34** which are fixed to and depend from the side bars of the leg rest frame **8** with the adjacent lugs **32** and **34** on each side of the chair being pivotally interconnected at their inner adjacent ends. The axes of the pivotal connections between the adjacent lugs on the opposite sides of the chair are horizontally aligned.

The spaced parallel side bars of the leg rest frame **8** are interconnected at their outer ends by a transverse cross or lateral ground-engaging bar designated as **36**.

Extending between and connected to the pairs of lugs **32** and **34** on the opposite sides of the chair, is a transversely extending support rod **40** serving as the pivot means for the pairs of adjacent lugs **32** and **34** and also serving to maintain the side bars of the seat **6** in their spaced parallel relation. Said support rod **40** is suitably contoured, as shown in FIG. 1, so as to support, but not restrict, the downward curving of a seat cushion when body weight is placed thereon in operational use.

As will be observed, the seat frame **6** and leg-rest frame **8** are turnable relative to each other on the rod **40**.

Inwardly of the forward extremities of the side bars of the leg rest frame **8**, the upper ends of the adjacent side bars of the leg rest frame support **10** are disposed and are pivotally connected thereto. The axes of these pivotal connection are horizontally aligned. As will be observed, the leg rest frame support **10** and leg rest frame **8** are turnable relative to each other on the said pivotal connections.

When the leg rest frame support **10** is in supporting position, its transversely extending cross or lateral bar **44** interconnecting the side bars thereof, rests upon the ground or floor slightly forwardly of the cross bar **36** of the leg rest frame.

Arm rests **16** may each consist of a pair of tubular members and are placed in side-by-side relation. The juxtaposed members of the pair are pivotally connected

at their rearmost extremities at **50** to the outer side of the adjacent side bar of the back-rest member **4**. The axes of the pivots **50** are horizontally aligned.

The upper extremities of the front and rear leg members **12** and **14** on each side of the chair are pivotally connected at **60** to each other and to the downwardly depending flange of the adjacent adjusting mechanism **62**. The axes of the pivots **60** are horizontally aligned.

On each side of the chair, an elongated primary link member **70** is disposed outwardly of and parallel to the adjacent side bar of the seat frame **6**. Each said link member **70** is pivotally connected at **66** at its forward end to the respective adjacent front leg member **12** and the respective adjacent side bar of the seat frame and is pivotally connected at its rearward extremity to the outer side of the lower extremity of the adjacent side bar of the back-rest **4**. The transverse rod member **22** extends through the link member **70** at each side of the chair whereby the pivotal connections of said link members are achieved.

As will be observed, the back member **4** and seat frame **6** are turnable relative to each other on the transverse rod member **22**.

The pivot bar **30** extends laterally through the side bars of the seat frame **6** on the opposite sides of the chair. As shown in FIG. 6, the ends of said pivot bar are extendable in a loose fitting manner through appropriately aligned openings in the upper extremities of adjacent folding members **80** at each side of the chair.

The upper extremities of control members **84** on each side of the chair are pivotally connected at **85** to the adjacent primary link member **70**.

The lower extremities of each folding member **80** and its adjacent control member **84** are pivotally connected at **81** to each other. The lower extremity of the control member **84** is pivotally connected at **82** to the adjacent side bar of the rear leg frame **14**.

The pivot bar **30** has conventional extensions at its opposite sides extending laterally beyond the side bars of the seat frame and through the folding members **80**, and has opposite ends bearing against the adjacent side bar of the rear leg frame.

In the modified form illustrated in FIG. 7, the relative positions of the folding member **80** and the control member **84** have been reversed as shown in members **80'** and **84'** and both members have been pivotally connected at their lower extremities to the adjacent side bar of the rear leg frame **14'** as by a pivot pin **82'**.

Transversely extending cushion supports **90** are disposed between the opposite side bars of the back-rest frame **4**, the seat frame **6**, and the leg-rest frame **8**, and preferentially comprise thin, resilient metal bands attached at their opposite ends to the inner sides of the side bars of the respective back-rest frame, seat frame, or leg-rest frame, as the case may be, by coil springs **92**.

Cushions **96** may be detachably affixed to the side frames of the back-rest frame, seat frame and leg-rest frame, as by straps **98** or the like.

Operation of the chair folding linkage will now be described.

As illustrated in FIGS. 3 and 4, the seat frame **6** may be manually raised from its normal longitudinal position, as in FIG. 2 to a position where it is generally parallel to the back-rest frame **4**. The leg-rest frame **8**, being pivotally connected to the seat-frame **6**, is simultaneously brought to a position of general parallelism relative to the back-rest.

Force or pressure applied to the forward surfaces of the side bars of the front leg member **12** is transmitted through the elongated primary link member **70** to the rod **22** which extends through the side frames of the back-rest **4**, whereupon the back rest is brought upwardly and forwardly toward the seat frame. The control member **84**, being pivotable relative to the link member **70**, is caused to rise upwardly and rearwardly, impart-

ing a corresponding motion to the folding member **80** to aid in the smooth, easy folding of the chaise components.

Continued pressure on the side bars of the seat frame brings the cushion **96** of the seat-frame into contact with the cushion **96** of the back-rest frame and the chair is completely collapsed as shown in FIG. 4. The leg-rest frame support **10** is brought upwardly from the ground and disposed between the seat-frame **6** and the leg-rest frame **8**.

An adjusting mechanism **62**, by means of which the back-rest **4** may be inclined to any of the plurality of angular positions shown in FIG. 2, is disposed within the circumference of each of the inner tubular members of the arm-rests **16**. An elongated slot, not shown, is cut in the bottom surface of each of said tubular members adjacent their forward ends. Circular apertures, also not shown, are disposed rearwardly of, and adjacent, the forward edges of each of said slots. The diameter of this circular aperture is greater than the width of the slot, thereby causing its perimeter to extend outwardly of said slot.

The adjusting mechanism **62** may be formed from flat metal stock of appropriate thickness to be receivable loosely within the aforementioned slot. A flange depends from the lower surface of the adjusting mechanism adjacent its forward end upon which the front and rear leg frames are pivoted.

The plane of the upper surface of the adjusting mechanism is broken by depressions formed by inclining surfaces which slope downwardly to a point below the plane of the top surface, where they curve gently to rise on a line perpendicular to said top surface. Although it is contemplated that five of these depressions will be provided in the top surface of the adjusting mechanism, it will be noted that a greater or lesser number may be utilized, thereby increasing or decreasing the number of positions to which the back-rest may be inclined.

The rearmost extremity of the adjusting mechanism is shaped in such manner as to form a foot of suitable contour to allow the insertion of the adjusting mechanism into the circular aperture disposed at the forward end of the slot. After insertion of the apparatus within the slot, this foot acts as a stop to retain the rearmost extremity of the adjusting mechanism within the slot. Circular buttons extend outwardly from each of the sides of the adjusting mechanism in proximity to its forward end. These buttons also act as stops in preventing the forward end of the adjusting mechanism from dropping from the slot.

A transverse circular pin is passed through the tubular member and is disposed centrally of and above, the slot. Said pin is receivable within the depressions formed in the top surface of the adjusting mechanism.

When it is desired to change the angle of the back-rest, upward force is exerted by hand on the lower surface of the arm-rests, thereby causing the adjusting member to fall clear of the transverse pin. When the arm-rests are released, after the desired back-rest angle has been reached, the transverse pin is again engageable within one of the depressions in the top surface of the adjusting mechanism, and the back-rest is locked in place.

The invention is not restricted to said embodiment and same is not intended to be exhaustive of, nor limiting of, the spirit or scope hereof. That is, the precise construction of the figures of the drawing need not be slavishly followed in order to practice the spirit the invention.

I wish it understood that the objects of the invention are susceptible of attainment by use of constructions different in certain respects from that disclosed, minor changes and variations in the size, shape, thickness, form and variations in size, shape, thickness, proportion, dimensions, integration, cooperation of material and/or type of sub-assembly an accessory utilized in the invention being previously reverted to, all without departing from the underlying principles, scope and spirit of the appended claim.

It is premised, however that such adaptations and/or modifications should be and are intended to be comprehended within the meaning and range of equivalence of the below subjoined claim there being no intent to have this invention limited to or circumscribed by any specific details.

It is believed from the above description that no difficulty will be encountered in understanding the construction, the method of use and operation of the device herein disclosed. The invention is of simple and practical construction and is adapted to accomplish among others all of the objects and advantages herein set forth.

Without further analysis, the foregoing is intended to so fully reveal the gist of my invention and its construction and operation that others can, by applying current knowledge, readily adapt it for various applications without omitting features which, from the standpoint of prior art, fairly constitute essential characteristics of its generic and/or specific aspects. The substitution of equivalents and other changes, modifications and alterations as circumstances may suggest or render expedient, are contemplated since the invention is susceptible of such without departing from its real spirit or underlying principles. Stated otherwise, it is not desired to limit this invention to the exact construction shown and described as the objects hereof may be attained by the use of constructions different in certain respects from that disclosed.

The invention is claimed, broadly as well as specifically, as indicated in the appended claim, and same are desired to include within the scope thereof all of said suitable variations, modifications and equivalents by which substantially the results of the invention may be obtained through the use of substantially the same or equivalent devices or means. Accordingly, limitation hereof should only be made as determined by a proper interpretation of the subjoined claim.

What is claimed as new and useful is:

A collapsible chair construction comprising, a seat frame, a back frame having its lower region pivotally connected to the rearward region of a pair of primary link members each pivoted at its forward region to said seat frame for relative swinging movement of said back frame about a lateral lower rear axis, a front-leg frame pivotally connected intermediate its upper and lower ends to each of said links and to a forward region of said seat frame for relative swinging movement about a lateral lower front axis, laterally spaced arm rests each pivotally connected at its front end to the upper end of said front leg frame and to a rear leg frame for relative swing movement about a lateral upper front axis and pivotally connected at its rear end to an intermediate region of said back frame for relative swinging movement about a lateral upper rear axis, a pivot bar extending between spaced side bars of said seat frame, folding links each pivotally connected at its opposite ends to said pivot bar and to said rear leg frame, and control links each pivotally connected at its opposite ends to said rear leg frame and folding links and to said primary link members all arranged for effecting said seat frame into substantial parallelism with said back frame at a distance from said seat frame when said seat frame is swung forward relative to said back frame.

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