(No Model.)

M. S. CURTISS.

RECLINING CHAIR.

No. 332,237. Patented Dec. 15, 1885.

Fig. 1.

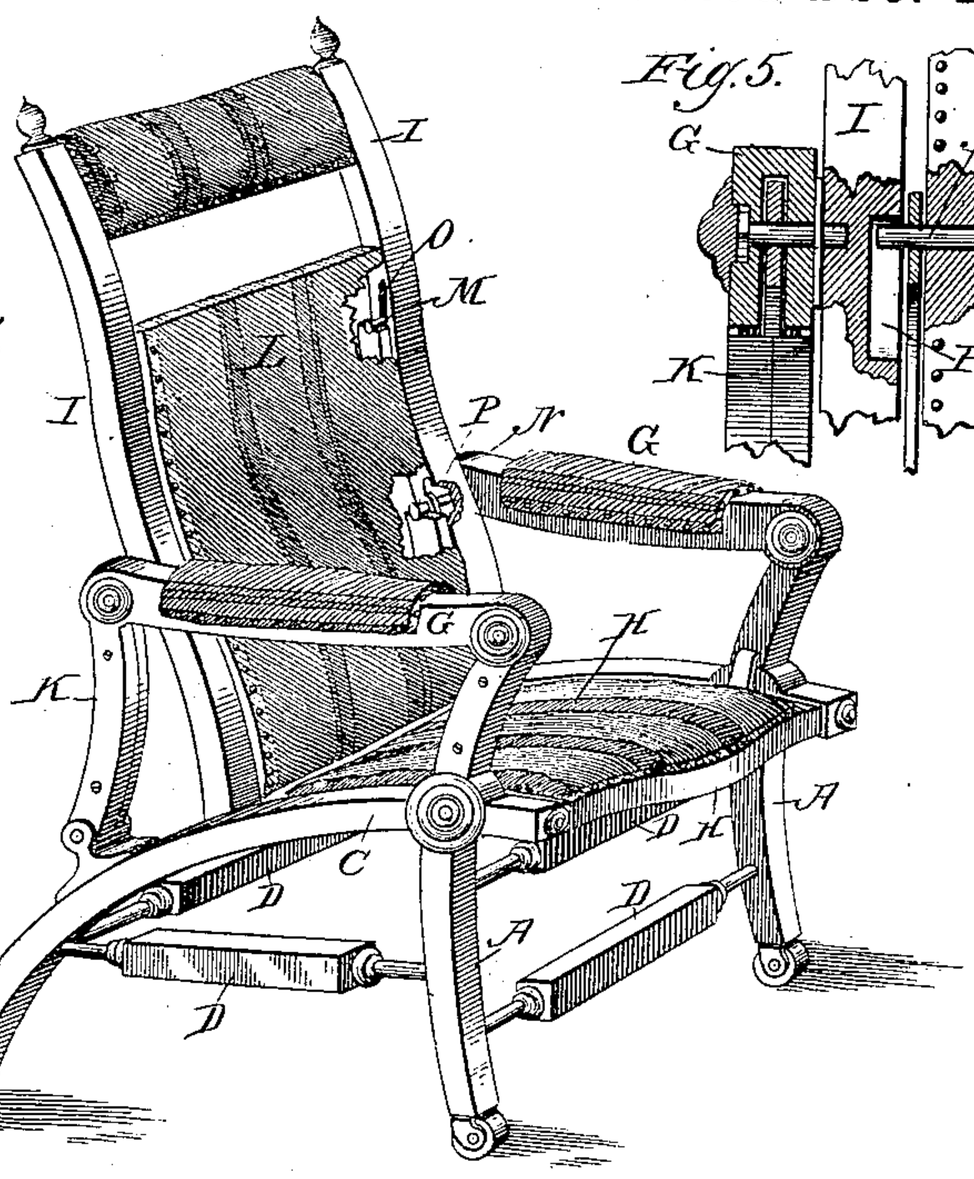


Fig. 5.

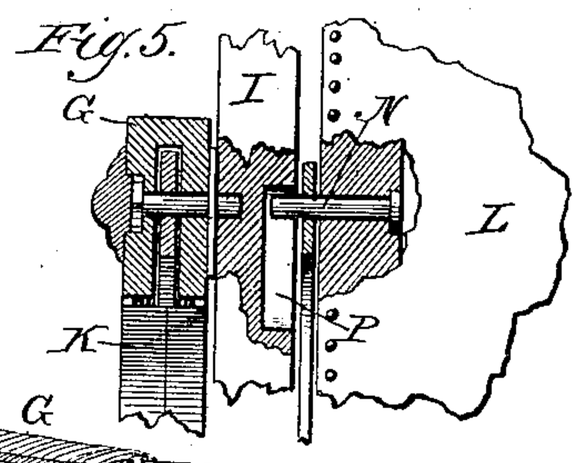


Fig. 4

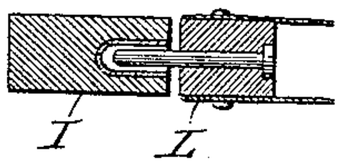
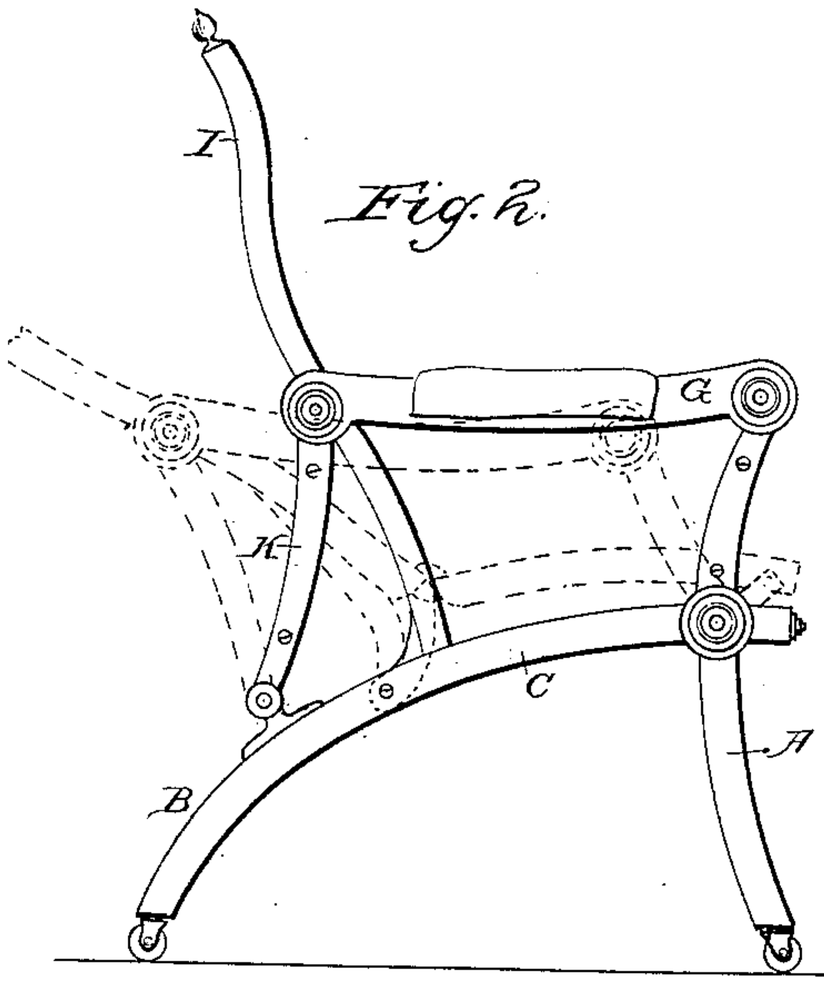
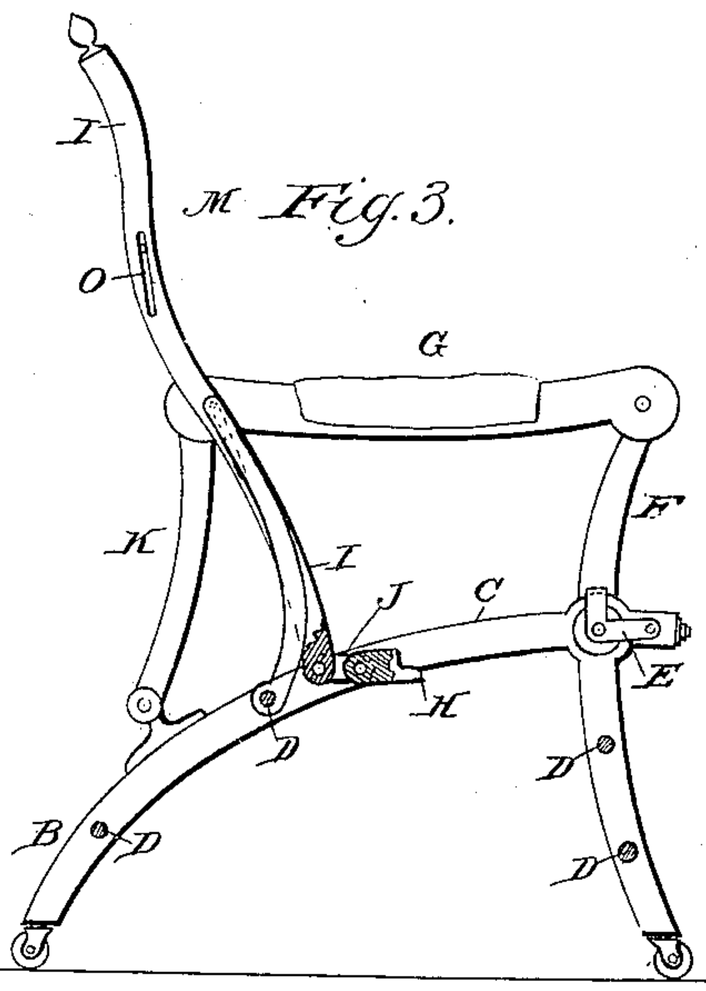


Fig. 2.



M Fig. 3.



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UNITED STATES PATENT OFFICE.

MARSHALL S. CURTISS, OF CHICAGO, ILLINOIS.

RECLINING-CHAIR.

SPECIFICATION forming part of Letters Patent No. 332,237, dated December 15, 1885.

Application filed April 25, 1884. Serial No. 129,223. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL S. CURTISS, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Reclining-Chairs, of which the following is a specification.

This invention relates to improvements in reclining-chairs in which the back and seat are flexibly connected together and to the arms and base-support, as set forth in United States Letters Patent No. 280,356, granted me July 3, 1883.

This invention has for its objects to relieve the occupant of the chair from the unpleasant sensation of a chair-back sliding upon his body, or vice versa, as the case may be, when in the act of reclining or rising from that position, and as is necessarily the case when the said back is rigidly connected to a hinged back-frame and flexibly connected to a movable seat. A further object is to maintain the back in approximately a fixed position relative to the swinging seat and arm-rests and to have such a connection between the back and base that the rise and descent of the back-frame shall be on and independent of the back, while at the same time the back may oscillate on its bearings in the back-frame, so as to throw the lower end of the back forward and its upper end backward sufficiently to respectively and effectively support the small of the back and maintain the shoulders of the occupant in an easy reclining position.

A still further object of this invention is to strengthen and increase the durability of the chair by shortening the leverage of the back-frame, and in such a manner that a direct flexible connection of said frame to the base may be dispensed with and the frame have at its lower end a shifting movement with the seat, whereby the strain of the back-frame will be distributed to other parts of the chair; and, finally, to provide certain details of construction, hereinafter described, for rendering the chair more serviceable, convenient, and simple in construction. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 illustrates a perspective view of a chair embodying my invention; Fig. 2, a side elevation of the same in full lines, and its reclining position in dotted lines; Fig. 3, an elevation illustrating the inside of one end of the same, and showing the guide-slots in the back-frame for the back and one of the levers connecting said back with the base; Fig. 4, an enlarged detail section of the back and the back-frame, and showing the upper slot and connecting-pivot; Fig. 5, a detail section of the arm, the standard pivoted thereto, and the back-frame and back, and the pivots connecting these several members.

Similar letters of reference indicate the same parts in the several figures of the drawings.

The supporting-base consists of the front legs, A, rear legs, B, and top sills, C, which sills form a continuation of the rear legs, all of said legs being suitably braced by the usual rounds, D, to render the base a rigid structure. Pivoted at their angle, on the inside of the forward portion of the base-support, are bell-crank levers E, (see Fig. 3,) the upper arms of which are rigidly secured to standards F, which are free to move on the base, and are pivoted to the arm-rests G, which they support at their forward ends. The other ends of the bell-crank levers project forward and are pivoted to the seat H, which is connected at its rear end to the back-frame I by a hinge or pivot, J, of any preferred construction adapted to flexibly connect the back-frame and seat together. Hinged or pivoted to the sills C are standards K, which are mortised in the rear ends of the arm-rests in such a manner that a single pivot-bolt passed through the arm-rests and standards into the back-frame serves to pivotally connect these three members together. In this connection it should be stated that the standards K may be entirely of metal incased in wood or upholstered, and so also the standards F may be formed of a continuation of the bell-cranks and similarly covered.

The back L is provided at each of its side edges with two sets of pins, the upper set, M, engaging with slots O on the inside of the back-frame, and the lower set, N, engaging with similar slots, P, in said frame, the said slots forming elongated guideways for the pins, so as to permit the back-frame to slide and the back to oscillate, as hereinafter described.

Pins N are at substantially the center of length of the back, and may be said to be the axial pins, or those upon which the back oscillates, and the guideways of these pins are straight. Pins M are between the center and upper end of the back, and their guideways are at an oblique angle to the guideways P—that is to say, they begin at their upper ends toward the front side of the back-frame and extend downwardly toward the rear side thereof.

With the back at its highest elevation in the frame and its two sets of pins at the upper extremities of their respective slots, it will be seen that in swinging and relatively raising the back-frame on these pins the upper end of the back will be forced outwardly and backwardly, swinging the back on its axis and throwing its lower end forward, so as to support the small of the back of the occupant.

In order to give the back the sliding movement and functions ascribed, said back is connected to one of the rounds D of the base-support (see Fig. 3) by links Q, pivoted to the rounds at their lower ends, and sleeved loosely on pivots N at their upper ends, which links, owing to their having a fixed support on the rounds and but a slight oscillating movement thereon, serve to maintain the back at a substantially uniform height above the rear portion of the base, and at the same time permit the back to freely turn on its axis, as before described. It should, however, be understood that if the links were connected to any other rigid portion of the base the result would be substantially the same as when mounted upon the rounds, which is probably the more convenient construction, because affording a more effectual concealment of the links in the particular style of chair herein shown.

In my former patent the back-frame at its lower end is hinged to the base-support, while the sole support of the rear ends of the arm-rests is by a pivot-connection directly with the back, and as a result the weight of the body of the occupant in a reclining position, except so far as supported by the seat, is sustained entirely by the back-frame, which is extended to the farthest possible limit from its fulcrum.

In my present invention by flexibly connecting the back-frame to the seat and pivoting it at a point above its lower end, and to the arm-rests and standards K, the leverage of the back-frame is not only shortened, but the weight of the body of the occupant on the back-frame, when in a reclining position, is almost entirely supported by the base, while at the same time the back-frame and rear end of the seat, when the back-frame is in an upright position, are supported entirely by the base through the medium of the short standards K, and thus the back-frame is relieved from strains having a tendency to break it down. Other advantages of this construction are its adaptability for the present back to have the oscillating movement ascribed to it, and a shifting angle of inclination conforming to that required by the shifting of the seat.

While the back and back-frame have been set forth in connection with the particular chair herein described and shown, my invention includes, broadly, a back held substantially stationary, in conjunction with a rising and falling or swinging back-frame, whether or not said back-frame is directly and flexibly connected to the seat, for it is obvious that to omit the flexible connection between the back-frame and seat and connect the former to the arms and base or any other portion of the chair, so that the back-frame will be caused to rise and fall in conjunction with the rising, falling, or swinging of the seat, would be within the spirit of my invention, and this would be true even though the back had no oscillating movement on its own axis; nor is the invention involved in the particular construction of chair-body limited to or by the employment of the fixed back, for so far as this portion of my invention is concerned the back may be secured to the swinging back-frame or to the flexibly-connected seat; and in this connection it may be stated that the arrangement of the bell-cranks may be varied in the manner described in my former patent; nor is my invention limited to the particular means shown and described for pivotally and flexibly connecting the several parts of the chair together, for other common and well-known devices may be as well employed for this purpose, and as a particular style of chair may require.

The general distinguishing features between this and my former chair, herein referred to, are that in the former construction the back-frame has a fixed fulcrum and the back a shifting fulcrum, whereas in the present chair I have just the reverse—that is to say, the back-frame has a shifting fulcrum and the back a substantially fixed fulcrum.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a chair, a base, a back-frame, and a flexible connection between said base and back-frame, secured to the back-frame toward its lower end, in combination with a back connected with the back-frame by shifting bearing, substantially as described.

2. A supporting-base, a back, and an intermediate shifting bearing, in combination with the seat flexibly connected with the back and base, substantially as described.

3. A back-frame, a supporting-base, a back pivoted in the back-frame, and a pivoted standard directly connecting said base and back-frame, in combination with a seat flexibly connected to said back-frame, and devices, substantially as described, connecting the seat with the base and back-frame, as and for the purpose set forth.

4. In a chair, the combination, with a supporting-base, a back-frame, and a flexible connection between said base and frame, of a back, a shifting bearing-connection between the back and back-frame, and a fixed connection between said back and the supporting-base, substantially as described.

5. A supporting-base, a back-frame, and a seat flexibly connected together and with the base, in combination with a back, and a fixed support for and connecting the back with the base, substantially as described.

6. The combination, with a supporting-base, a back-frame, and a flexible connection between the base and frame, said back-frame being provided with oblique guideways or bearings, of a back and a pivoting-support therefor, said back having pins working in said guideways, whereby the back is caused to automatically move, substantially as described.

7. The combination, with a back-frame, a base, and links pivoted to the base and supporting the back-frame, of a back, a shifting bearing between the back-frame and the base, and a flexible connection between the back-frame and seat, substantially as described.

8. The combination, with the base, the back-frame and seat flexibly conected together, of the front and rear standards, the arm-rests and flexible connections between the standards and arm-rests, and between said standards and the base, back-frame, and seat, substantially as described.

MARSHALL S. CURTISS.

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