Dec. 13, 1960 E. L. MOORE 2,964,097

CRANK-ROD FOR AN ARTICLE OF FOLDABLE FURNITURE

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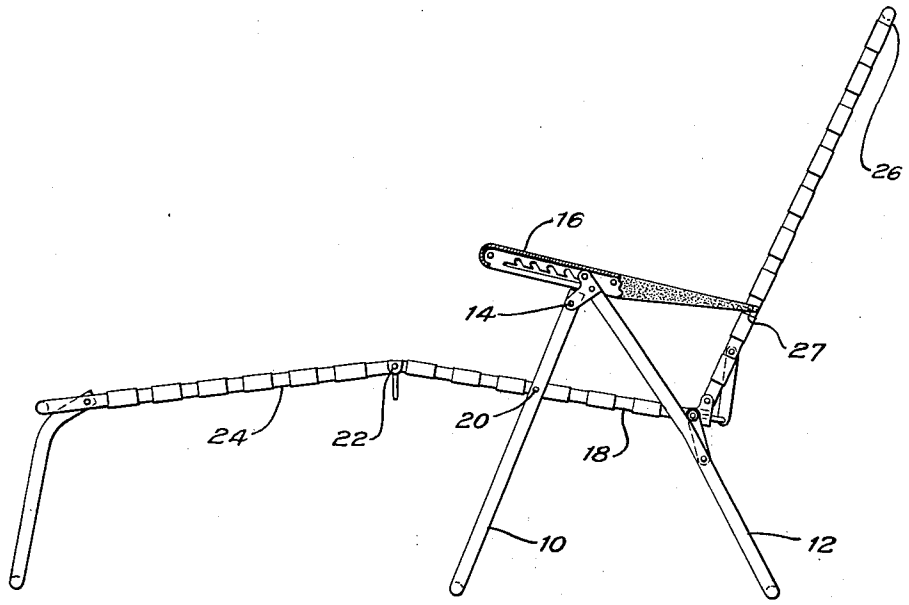


Fig. 1.

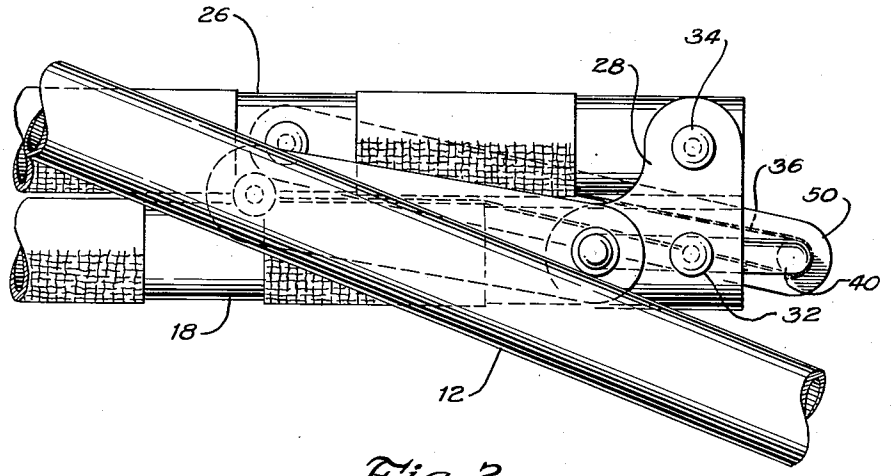


Fig. 2.

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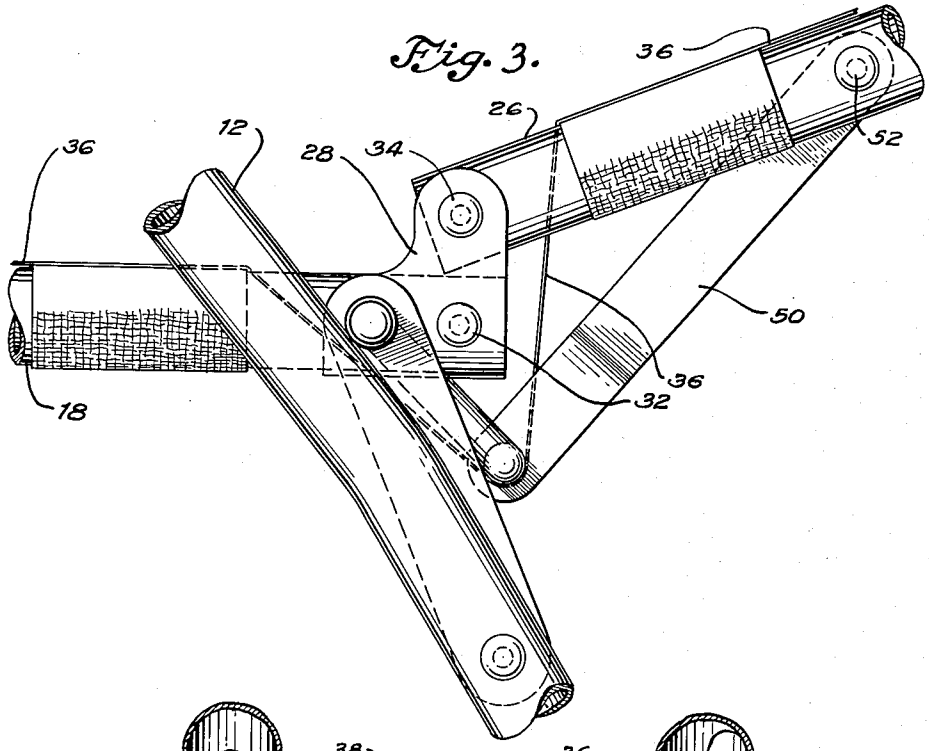
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Fig. 3.



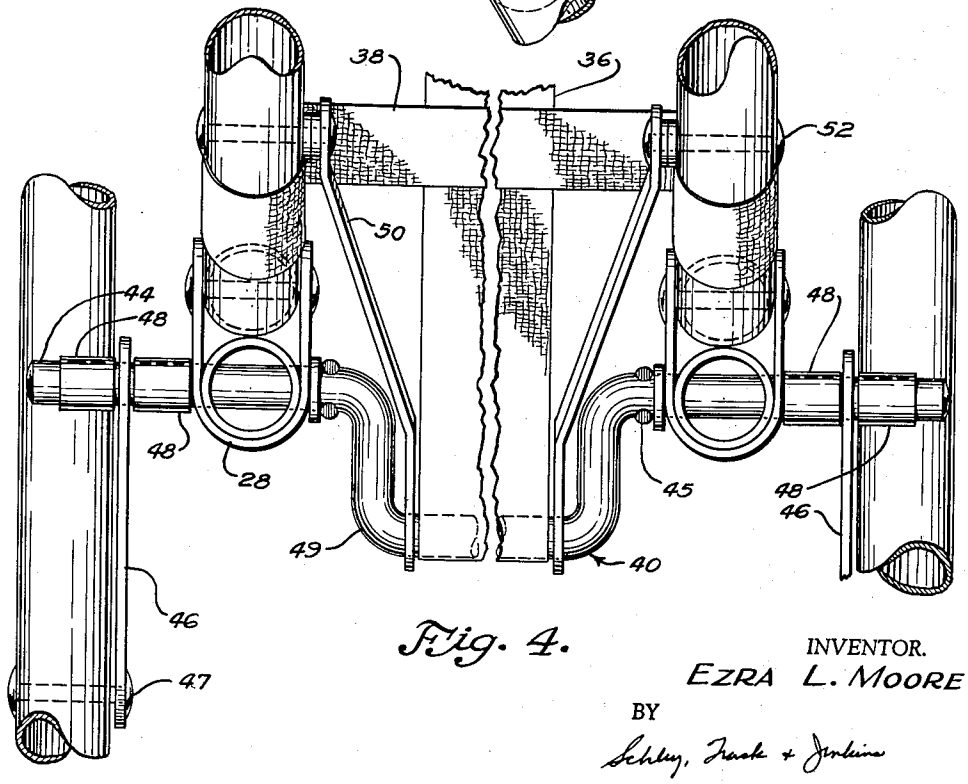


Fig. 4.

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CRANK-ROD FOR AN ARTICLE OF FOLDABLE FURNITURE

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5 Claims. (Cl. 155—119)

This invention relates to a crank-rod for foldable articles of furniture, such as chairs, chaise lounges, and the like, employing elongated webs as seat and back-supporting surfaces.

It is an object of my invention to provide a crank-rod adapted to be used in an article of foldable furniture which will maintain the webs thereof taut when the article is disposed in both folded and extended positions, which will support the seat and back thereof in extended position, and which will be disposed well out of contact of a person using the article of furniture.

My invention is adapted to be used on articles of foldable furniture, such as chairs, chaise lounges, and the like, of the general type comprising floor-engaging legs pivotally connected to and supporting pivotally interconnected back and seat frames. Such structures normally employ elongated strips of webbing as supporting surfaces for the seat and back. An example of such an article of furniture is a foldable chaise lounge having pairs of pivotally interconnected front and rear-supporting legs conveniently connected at their upper ends to a pair of laterally spaced arms. A back frame pivoted on said arms is pivotally connected to a seat frame mounted on the front-supporting legs. The supporting surfaces for the seat and back are provided by laterally spaced longitudinally extending webs interwoven between a second set of transversely extending webs.

To support the seat and back frames in an extended position and to maintain the longitudinally extending webs taut when the lounge is in both its extended and collapsed positions, I provide a rotatable crank-rod extending transversely across the rear of the seat frame, the ends of said rod projecting beyond the seat frame into supporting engagement with the rear legs. The intermediate stretch of the rod is offset for supporting the intermediate stretches of the longitudinal webs and for disposing said rod out of contact with a person using the lounge. The rod is pivotally and rotatably interconnected to the lounge by a plurality of links adapted to move the rod into a position for supporting the seat frame on the rear-supporting legs when the lounge is in its extended position, and for maintaining the longitudinally extending webs taut when the lounge is in both its extended and collapsed positions.

The accompanying drawings illustrate my invention. In such drawings:

Fig. 1 is a side elevation of a chaise lounge having my crank-rod mounted thereon;

Fig. 2 is an enlarged fragmentary side elevation of a lounge in a collapsed position, and showing my crank-rod mounted thereon;

Fig. 3 is an enlarged fragmentary side elevation similar to Fig. 2, but showing the lounge in an extended back-reclining position; and

Fig. 4 is a rear view of the structure illustrated in Fig. 3.

My invention is adapted to be incorporated in an article of foldable furniture, such as a chair, chaise lounge, and

the like. For purposes of illustration, I have shown my rotatable crank-rod incorporated in a foldable chaise lounge. In the lounge illustrated, there are provided pairs of front and rear-supporting legs 10 and 12 pivotally connected at their upper ends to an adjustable locking mechanism 14 mounted on each of the lounge arms 16. A U-shaped back frame 26 is pivotally joined to each of the arms 16, as at 27, and is pivotally interconnected to the rear edge of a seat frame 18 pivotable about its connection to the front-supporting legs 10. Pivotally connected to the forward end of the seat frame is a U-shaped seat frame extension 24 adapted to support the feet and legs of the person using the lounge. The seat and back frames are pivotally joined by a pair of yokes 28. Each of said yokes comprises a U-shaped metal stamping secured to the seat frame near its web by a pin 30 and pivotally connected to the back frame 26 by a pin 34.

The supporting surfaces for the lounge are formed by a plurality of laterally spaced longitudinally extending webs 36 having their ends connected to the upper stretch of the back frame 26 and to the forward stretch of the seat frame extension 24. Desirably, a plurality of transversely extending webs 38 secured to the lateral sides of the seat, back, and seat extension frames are interwoven between the webs 36 to give additional strength to the supporting surfaces of the lounge.

In order to support the lounge in an extended position and to maintain the webs 36 taut when the lounge is in both its extended and collapsed positions, I provide a rotatable crank-rod 40 extending transversely across the lounge adjacent the rear edge of the seat frame 18. As shown, the ends 44 of the rod 40 extend through openings in the seat frame 18 and the yokes 28 to project beyond the lateral edges of the seat frame and lie in the plane of movement of the rear-supporting legs 12. Conveniently, to prevent any lateral movement of the seat frame on the rod, bosses 45 may be formed on the rod such as by swaging. Each of the rod ends 44 is rotatably carried in a link 46 pivotally mounted on the inner face of each of the rear-supporting legs, as at 47. The links 46 are retained on the rod 40 by means of pairs of bushings 48 press fit on the rod on either side of each of the links 46. Thus, with the legs 10 and 12 extended, movement of the seat and back frames into their extended positions will cause the rod 40 to swing generally upwardly about the axis of the link connections 47, with the links 46 swinging over their centers to carry the ends 44 of the rod into a seat-supporting position against the back face of the legs 12.

As shown in Fig. 4 the intermediate stretch 49 of the rod disposed within the lateral extent of the seat frame 18 is offset from the ends 44 to support the webs 36 in an extended taut position. The offset stretch 49 is connected to the lounge by a second pair of links 50 pivotally connected to the lateral members of the back frame 26, as at 52. Thus, forward or rearward tilting of the lounge back frame 26 will cause the links 50 to swing about the axis of the link connections 52 rotating the rod 40 in a manner such that the offset stretch 49 will maintain the webs 36 in an extended taut position. As shown in Fig. 3, upon movement of the back frame 26 into a reclining position, the links 50 rotate the offset portion 49 of the rod 40 downwardly to maintain the webs 36 taut; and conversely, as shown in Fig. 2, when the lounge is in its fully collapsed position, the links 50 rotate the offset stretch 49 of the rod into a position to maintain the longitudinally extending webs 36 taut. As is apparent, upon extension of the lounge, the rotational movement of the rod 40 disposes the intermediate offset stretch 49 substantially rearwardly of the seat frame well out of contact with the person using the lounge.

I claim as my invention:

1. In a foldable article of furniture of the type comprising pairs of front-supporting and rear-supporting legs pivotally connected to a pair of laterally disposed arms, a back frame pivotally connected to said arms, a seat frame pivotally connected to the front-supporting legs and to the back frame, and a plurality of longitudinally extending webs connected to the opposed ends of the seat and back frames and forming supporting surfaces therefor; the improvement, comprising a rod extending transversely across the rear of the seat frame and having its intermediate portion offset for the reception of the intermediate stretches of the longitudinally extending webs to support the same in an extended taut position between the seat and back frames, a pair of links swingably interconnecting the end portions of said rod to the rear-supporting legs to swing the rod against said rear-supporting legs for supporting the seat frame thereon in an extended position, and a second pair of links rotatably interconnecting the intermediate offset portion of said rod to the back frame and rotating said rod upon collapsing and extension movement of the seat and back frames to position said intermediate offset rod portion rearwardly of the seat-back frame interconnection when said frames are in extended and collapsed positions.

2. In a foldable article of furniture of the type comprising pairs of front-supporting and rear-supporting legs pivotally connected to a pair of laterally disposed arms, a back frame pivotally connected to said arms, a seat frame pivotally connected to the front-supporting legs and to the back frame, and a plurality of longitudinally extending webs connected to the opposed ends of the seat and back frames and forming supporting surfaces therefor; the improvement, comprising a rod extending transversely across the rear of the seat frame and having its intermediate portion offset for the reception of the intermediate stretches of the longitudinally extending webs to support the same in an extended taut position between the seat and back frames, a pair of links interconnecting the end portions of the rod and rear-supporting legs to swing the rod against the rear-supporting legs for supporting the seat frame thereon in an extended position, and a second pair of links interconnecting the offset intermediate portion of the rod and the back frame for rotating the rod upon pivotal movement of the back

frame to maintain the longitudinally extending webs taut when the article of furniture is in collapsed and extended positions.

3. The invention as set forth in claim 2 with the addition that said second pair of links rotate said rod to move the axis of its offset intermediate portion from a position in the general plane of the seat frame to a position below the plane of said seat frame as the back frame is moved from collapsed to extend reclining position.

4. The invention as set forth in claim 2 with the addition of means on said rod for holding the seat frame in a fixed lateral position thereon.

5. In a foldable article of furniture of the type comprising pairs of front-supporting and rear-supporting legs pivotally connected to a pair of laterally disposed arms, a back frame pivotally connected to said arms, a seat frame pivotally connected to the front-supporting legs and to the back frame, and a plurality of longitudinally extending webs connected to the opposed ends of the seat and back frames and forming supporting surfaces therefor; the improvement, comprising a rotatable crank-rod carried on the seat frame and extending transversely across the rear of the article of furniture to support the intermediate stretches of the longitudinal webs, and means swingably and rotatably interconnecting the crank-rod to the back frame and rear legs for imparting rotational and swinging movement to said crank-rod during extension of the article of furniture to swing said rod against the rear-supporting legs to support the seat frame thereon and rotate said crank-rod with respect to the seat and back frames to maintain the longitudinal webs taut.

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