Jan. 23, 1951 L. B. LAPLACE 2,539,023

CHAIR

Filed July 30, 1948

Fig. 1.

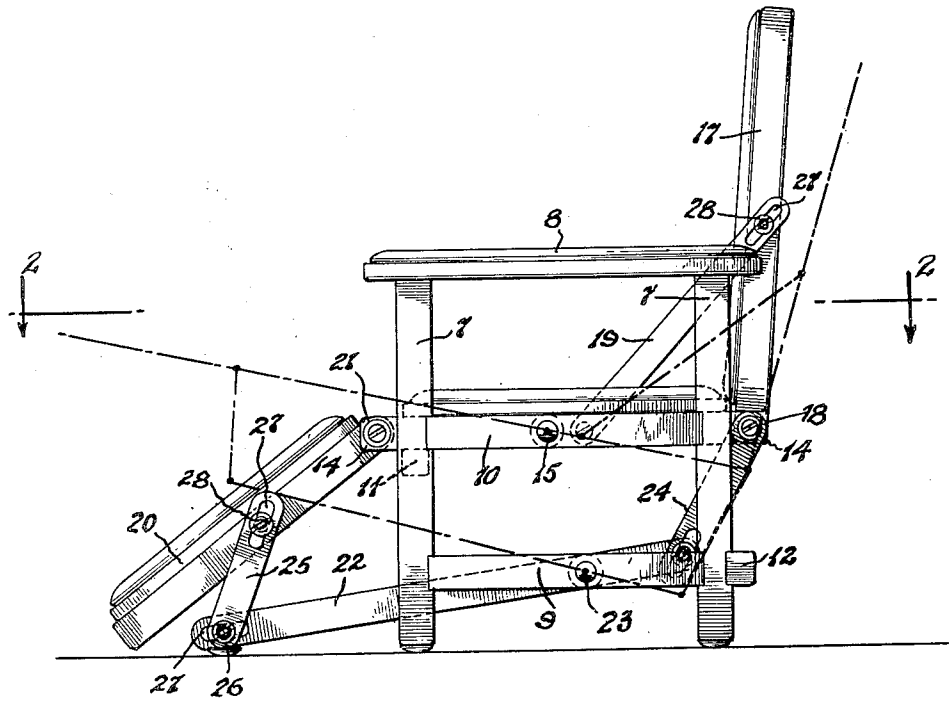


Fig. 2.

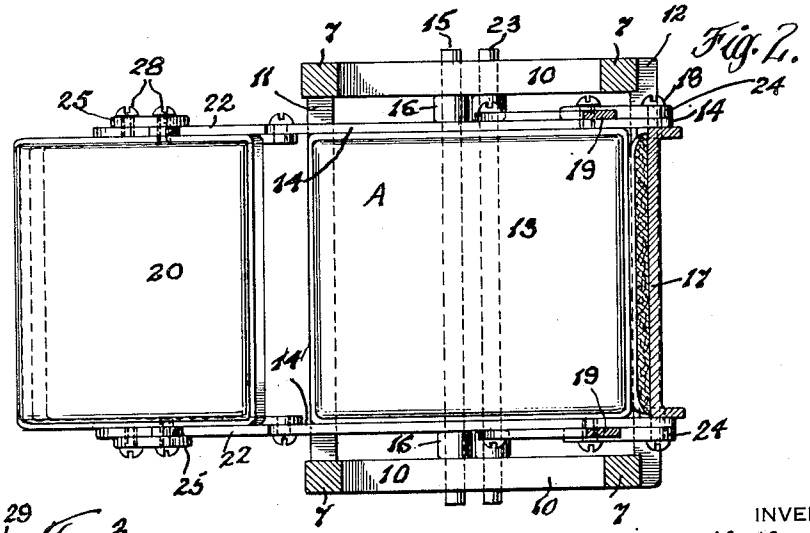
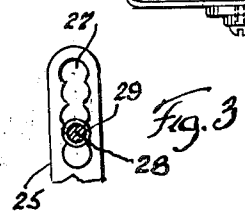


Fig. 3



INVENTOR.

Louis B Laplace

BY Synnestvedt & Lechner

ATTORNEYS.

Patented Jan. 23, 1951 2,539,023

UNITED STATES PATENT OFFICE

2,539,023

CHAIR

Louis B. Laplace, Ardmore, Pa.

Application July 30, 1948, Serial No. 41,560

5 Claims. (Cl. 155—28)

1

The present invention relates to a chair particularly useful for invalids and for therapeutic purposes, especially the latter.

The nature, objects and advantages of the invention will be best understood from the following description taken in connection with the drawings, in which:

Fig. 1 is a more or less diagrammatic side elevation of a chair embodying my invention;

Fig. 2 is a section taken on the line 2—2 of Fig. 1, and

Fig. 3 is an enlarged view illustrating a detail of the invention.

Referring now to the drawings, the chair frame comprises the four legs or standards 7, the two arms 8, two bottom side cross rails 9, two intermediate side rails 10, and the front and rear cross rails 11 and 12.

The seat indicated as a whole by the reference letter A comprises the seat proper 13 and a seat frame 14.

The seat and its frame are pivotally supported from the intermediate side cross rails 10 by means of the shaft 15, the seat and its frame being laterally positioned by means of the washers or buttons 16 carried by the shaft 15. The pivotal support is located approximately midway of the seat, considered fore and aft, and is desirably somewhat forward of the middle of the seat, for reasons which will later appear.

The back 17 of the chair has its lower end pivoted at 18 to the rear end of the frame 14, so that the back may rock forwardly or rearwardly. A pair of links 19 are pivotally connected at one end to the seat frame 14 and at the other end to the back, at a point approximately halfway between its upper and lower ends.

The foot rest 20 is pivotally connected at 21 at its rear end to the forward end of the frame 14.

A pair of rocker or lever arms 22 are pivoted intermediate their ends to the bottom side rails 9 by means of the shaft 23, the pivotal point of support being desirably slightly to the rear of the middle of the side rails, considered fore and aft.

A pair of links 24 have their lower ends pivotally connected to the rear ends of the lever arms 22 and their upper ends pivotally connected to the rear end of the frame 14; and another pair of links 25 are pivotally connected at their lower ends to the forward ends of the lever arms 22 and at their upper ends to the foot rest 20 about midway of the length thereof.

In Fig. 1 the chair is shown with the foot rest 20 in lowered position and the back 17 in its foremost position. In this position, the foot rest is supported from the floor by means of the buttons 26 at the forward ends of the lever arms 22.

2

Assuming that the chair is occupied, the position of the back and of the foot rest can be very readily adjusted by the occupant merely by shifting the weight of his body so as to shift the center of weight with respect to the pivot point of the seat and its frame. This causes the seat and its frame to rock about their pivotal axis. If the center of weight is shifted to the rear of the pivot point, the forward end of the seat will rise and the rear end sink, the amount of shift being determined by the degree of shift of weight to the rear of the pivotal support.

As the seat and its frame rock about the said axis, the back swings toward the rear and because of the lever arms and linkage provided by the members 24, 22 and 25, the foot rest rises and the parts tend to assume the position indicated in dotted lines, in which position the feet are higher than the seat. The chair is thus well adapted for the treatment of patients suffering from circulatory troubles, such, for example, as tend to cause stagnation in or insufficient flow of blood to the lower limbs. With such patients, because of the impairment of the natural circulation, blood flow may be favored by raising the lower limbs from a low position to a high position in which gravity assists in causing blood to drain from the lower limbs. After a time, the body is shifted to bring the parts again to the full line position shown, in which gravity now assists in supplying blood to the lower limbs. As stated, the shifting of the parts is readily accomplished by shifting the body to shift the center of gravity of the occupant with reference to the pivotal support of the seat and its frame.

For purposes of adjustment the links and the lever arms may be provided with slots 27 providing for lost motion with respect to the pivot screws 28 which I prefer to use for the pivots. These slots are shown diagrammatically in Figures 1 and 2. On inspection of Fig. 3, it will be seen that the sides of the slot are fluted and that sleeves 29 are provided which fit the flutes and surround the screws. By removing the screws and shifting the sleeves and again screwing the screws, adjustment may be effected without binding of the parts. In this connection, it will be appreciated that the screws need not be turned until the heads thereof bind.

I claim:

1. In a chair, a chair frame comprising front and rear standards, arms, bottom side rails, side

rails intermediate the arms and bottom rails, and cross rails; a seat and its frame, pivotally supported on the intermediate side rails to rock about a horizontal axis intermediate the ends of the seat considered fore and aft; a back pivotally supported at its lower end at the rear of the seat frame, a pair of angularly disposed links pivotally connected at their lower ends to the seat frame intermediate its ends and pivotally connected at their upper ends to the back at a point above the lower end thereof; a foot rest pivoted at its rear end to the front end of the seat frame; a pair of lever arms pivotally connected intermediate their ends to the bottom side rails intermediate their ends, a second pair of angularly disposed links pivotally connected at their lower ends to the rear ends of the lever arms and at their upper ends to the rear end of the seat frame, and a third pair of angularly disposed links pivotally connected at their upper ends to the foot rest and at their lower ends to the forward ends of the lever arms.

2. The chair of claim 1, in which the seat and its frame are pivoted on the intermediate side rails forward of the middle of the seat considered fore and aft.

3. The chair of claim 1, in which the seat and its frame are pivoted on the intermediate side rails forward of the middle of the seat considered fore and aft and the lever arms are pivoted to the bottom side rails to the rear of the middle thereof.

4. The chair of claim 1 in which the links have lost motion connection for adjustment.

5. The chair of claim 1 in which the links have slots which are fluted at the sides for adjustment and sleeves adapted to be positioned by the flutes are provided, and screws are employed for pivots.

LOUIS B. LAPLACE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
300,228	DePew	June 10, 1884
793,125	Fagerstrom	June 27, 1905