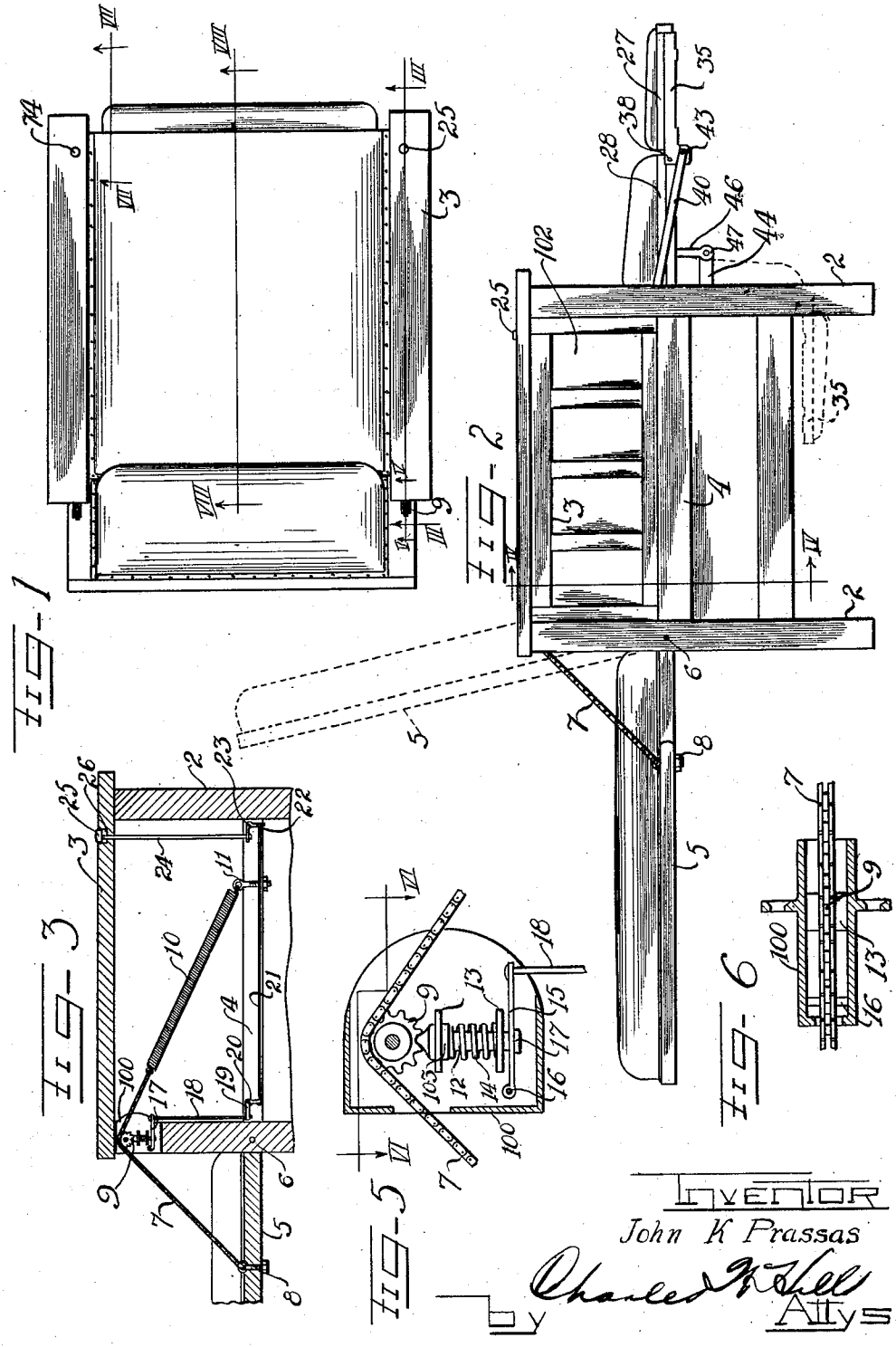
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CONVERTIBLE CHAIR

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CONVERTIBLE CHAIR

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Fig-4

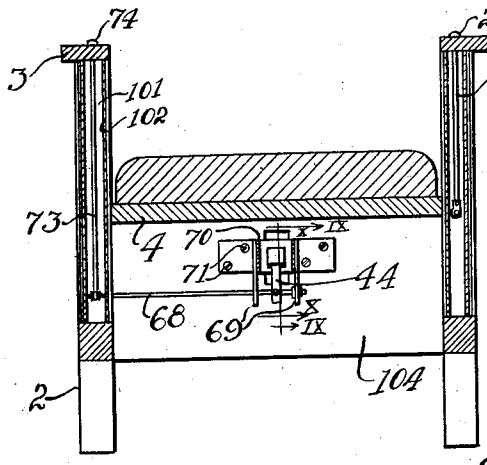


Fig-9

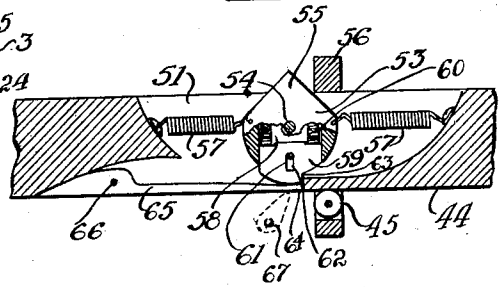
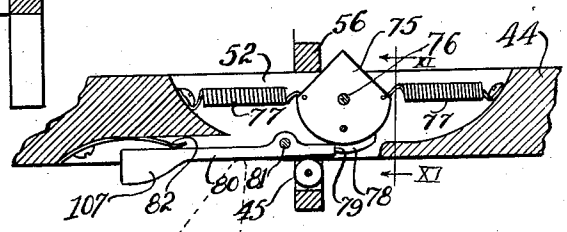


Fig-10



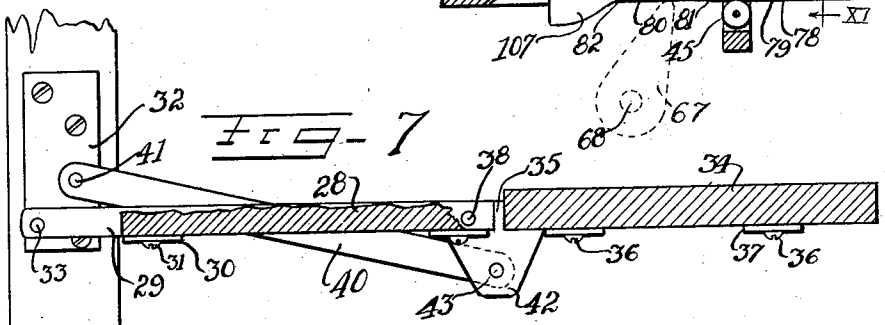


Fig-7

68 67

Fig-8

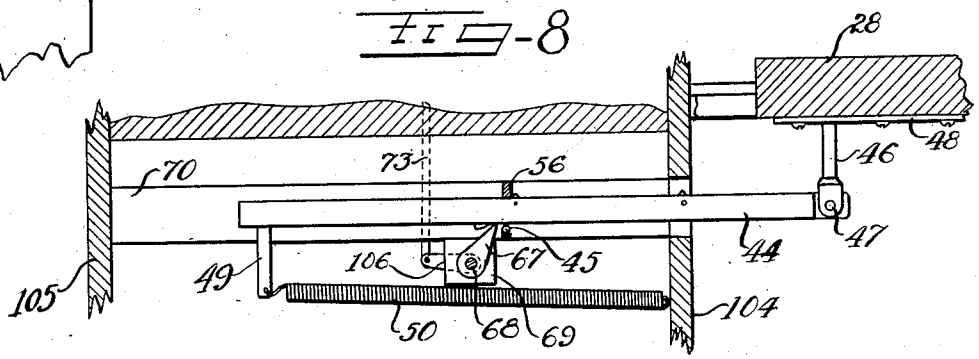
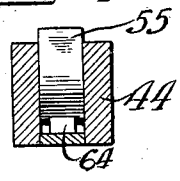


Fig-11



INVENTOR

John K Prassas

By Charles F. Wells Atty

Patented Mar. 25, 1930 1,751,599

UNITED STATES PATENT OFFICE

JOHN K. PRASSAS, OF CHICAGO, ILLINOIS

CONVERTIBLE CHAIR

Application filed February 28, 1927. Serial No. 171,410.

This invention relates to a convertible chair adapted to be used for sitting, lounging or sleeping purposes.

It is an object of this invention to provide a chair having adjustable back and foot rests, so constructed as to be capable of ready and easy manipulation into any desired position.

It is a further object of this invention so to construct a chair that it may be converted into either a lounging or sleeping chair, with novel means provided for obtaining an unusually long foot rest when in raised extended position.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawings.

On the drawings:

Figure 1 is a top plan view of a convertible chair embodying the principles of this invention.

Figure 2 is a side elevational view of the same converted into a bed, the normal positions of the foot and back rest being shown in dotted lines.

Figure 3 is a fragmentary sectional view taken substantially on line III—III of Figure 1 with the back rest down.

Figure 4 is a sectional view taken substantially on line IV—IV of Figure 2.

Figure 5 is an enlarged fragmentary sectional view taken on line V—V of Figure 1, with parts in elevation.

Figure 6 is a fragmentary sectional view taken on line VI—VI of Figure 5.

Figure 7 is an enlarged fragmentary sectional view taken on line VII—VII of Figure 1 with the foot rest in raised extended position.

Figure 8 is an enlarged fragmentary sectional view taken substantially on line VIII—VIII of Figure 1 with the foot rest in raised extended position.

Figure 9 is an enlarged fragmentary sectional view taken substantially on line IX—IX of Figure 4 with parts in elevation, and parts broken away and in section.

Figure 10 is an enlarged fragmentary sectional view taken substantially on line X—X of Figure 4 with parts in elevation.

Figure 11 is a sectional view taken on line XI—XI of Figure 10.

The reference numeral 1 indicates generally the supporting frame body of a chair adapted to be converted into a bed. Said frame portion 1, as illustrated, comprises the chair legs 2, hollow side arms 3, and seat portion 4 supported from said legs. While my invention has been illustrated in connection with a wooden arm chair, it will be understood that my invention is equally applicable to other types of chairs, such as upholstered chairs and the like.

A back rest 5 is pivotally connected at its lower end, as at 6, to the rear chair legs 2, so as to permit said back rest to be swung from normal vertical position represented by dotted lines in Figure 2 to horizontal or any intermediate position. Means for raising and lowering said back rest 5 include a pair of chains 7, each suitably secured by means of an eye-bolt 8 to said back rest 5 at a point intermediate its ends and trained over a sprocket 9 positioned in a hollow metal member 100 secured in the recessed top of each rear leg 2. A helical spring 10 connects the other end of each of said chains 7 to an eye-bolt 11 secured in the seat portion 4, both the chains 7 and springs 10 lying within the hollow portion 101 between the side arm panels 102.

It is thus apparent that the helical spring 10 acts to maintain the back rest 5 in normal elevated position. Said back rest 5 may, however, be lowered by pressure applied thereto against the tension of the spring 10. In order to maintain the back rest 5 in any desired position means are provided for locking one of the sprockets 9 against revolution, comprising a bolt or pawl 12 adapted to engage between the teeth of said sprocket 9. Said pawl 12 (Figures 5 and 6) is mounted for axial movement in apertured plates 13, said plates 13 being secured in the sides of the hollow member 100. A spring 14 surrounding the shank of said pawl 12 and confined between the lower plate 13 and the pawl head 103, normally holds said pawl 12 in engagement with said sprocket 9. A lever 15 pivotally mounted at one end upon a pin

16 is secured intermediate its ends as at 17 to the lower end of said pawl 12, for actuation thereof. To the other end of said lever 15 there is secured a vertical link 18. Said link 18 is connected at its other end to one arm of a bell crank lever 19 pivoted as at 20, within the hollow portion 101 of the side panels 102. A second link 21 extends horizontally through said hollow side panels and is connected to one arm of a second bell crank lever 22. Said bell crank lever 22 is pivoted as at 23 near the forward end of the seat portion 4. A vertical rod 24 is connected to the other arm of said bell crank lever 22 and extends upwardly through a chair arm 3, terminating in a knob 25 disposed within a recess 26 in said chair arm 3. It will be apparent that when the rod 24 is depressed by pressing against the knob 25, the bell crank lever 22 will be rocked, thus moving the link 21 forwardly to rock the bell crank lever 19 and depress the lever 17. The pawl 12 is thus disengaged from the sprocket 9 and the springs 10 free to raise the back rest 5. It should be noted that the mechanism for releasing the back rest 5, as just described, is completely concealed within the frame of the chair, and that the knob 25 is readily accessible to one sitting or reclining in the chair.

A two piece foldable foot rest, designated as a whole by the numeral 27, is secured to the front legs 2 of the chair, (Figures 7 and 8) and is provided with suitable mechanism for raising and lowering the same. Said foot rest 27 comprises a tread member 28 supported at each end by a side member or lever 29 having lower flanges 30 to which said tread member 28 is secured, as by means of screws 31. Each of said side members or levers 29 is pivoted at its rear end to a plate 32, by means of a pivot pin 33. Said plates 32 are rigidly secured to the inner faces of the front legs 2. A second tread member 34 forms an extension to the member 28 to provide a maximum length of foot rest. Said member 34 is secured at each end to side members or levers 35 by means of screws 36, passing through flanges 37 formed on said members or levers. The rear end of each of said members or levers 35 is pivoted by means of a pin 38 to the forward end of one of the members or levers 29. A pair of levers 40 is pivoted both to the plate 32 as at 41 and to a downwardly extending offset extension 42 formed on the side members or levers 35 as at 43. By reason of the fact that the pivot points 41 and 43 lie on opposite sides of the side members or levers 29, it will be apparent that pivotal movement of the side members or levers 29 effects a similar but greater pivotal movement of the side members or levers 35 about the pivot pins 38. As best shown in Figure 2, when the foot rest 27 is in extended position, the side members or levers 29 and 35 lie substantially in the same horizontal line, whereas when said foot rest 27 is lowered, the side members or levers 29 lie in vertical position and the side members or levers 35 in horizontal position under the chair seat pointing rearwardly. It is thus apparent that the foot rest 27 may be of greater length when extended than the vertical distance between the floor and the pivotal points 33.

The mechanism for raising and lowering the foot rest 27 will now be described. Said mechanism includes a horizontally disposed bar 44 (Figures 8 to 11 inclusive) adapted to be moved in and out over a supporting roller 45 mounted transversely between side bars 70. The forward end of said bar 44 is pivotally connected to a link 46 as at 47. Said link 46 is secured by means of a plate 48 to the under side of the foot rest member 28. A vertically dependent pin 49 extends downwardly from the rear end of said bar 44 and is connected at its lower end to one end of a helical spring 50, the other end of said spring 50 being secured to a front panel 104 of the frame 1. The tension of spring 50 accordingly tends at all times to hold the foot rest 27 in raised extended position. A plurality of locking means are provided to secure the foot rest in either raised or lowered position. For this purpose, the bar 44 is provided at spaced distances along its length with slots 51 (Figure 9) and 52 (Figure 10) arranged in tandem.

In said slot 51 there is mounted a cam 53 upon a pivot pin 54. Said cam 53 is provided with a triangular shaped upper portion 55 extending above the upper face of the bar 44, and adapted to engage a transverse bar 56 during movement of the bar 44.

In order to maintain the cam 53 in an upright position, a pair of springs 57 is secured to the end walls of the recesses 51 and to each side of the cam 53. The cam 53 is further provided with a recess 58 in which there is positioned a movable tongue 59. The tongue 59 is held in the recess 58 against a pair of springs 60 by means of a pin 61 passing through an elongated slot 62 in said tongue 59. The tongue 59 is accordingly capable of limited movement in the recess 58. The lower face of said tongue 59 is provided with an abrupt shoulder 63 adapted normally to engage a shoulder 64 formed in said bar 44. The engagement of said shoulders 63 and 64 accordingly prevents the cam 53 from rotating in counter clockwise direction as viewed in Figure 9 to allow the point 55 to pass under the transverse bar 56. A lever 65, however, pivoted as at 66 is associated with said cam 53 to bear against the tongue 59 in such a way as to effect upward movement of the tongue 59 when suitably actuated.

The mechanism for so actuating the lever 65 includes a cam 67 (Figure 8) rigidly se-

cured to a horizontal rod 68 rotatably mounted in straps 69. Said straps 69 are, in turn, secured to the spaced bars 70 running between the front and rear frame members 104 and 105, and secured thereto as by screws 71. Said rod 68 extends into the recess 101 in one of the side arm panels 102, and is there rigidly secured to the offset end 106 of a rod 73 (Figure 8) extending vertically within the recess 101 and terminating in a knob 74 (Figure 4).

Depression of the knob 74 and rod 73 rocks the cam 67 against the lever 65, thereby causing said lever to elevate the tongue 59 out of engagement with the shoulder 64 (Figure 9). As soon as this is done the spring 50 forces the bar 44 outwardly, thereby raising the foot rest 47.

When the bar 44 is in its outward position, a second cam 75 (Figure 10) positioned within the recess 52 engages the transverse bar 56 on the other side thereof to prevent rearward movement of the bar 44 due to weight placed upon the foot rest 27. Said cam 75 is pivotally mounted upon a pin 76, springs 77 tending to hold said cam in upright position. In the lower arcuate face of the cam 75 there is formed a lug 78, having an abrupt shoulder 79 adapted to engage with one end of a lever 80. Said lever 80 is pivoted as at 81 intermediate its ends, a curved spring 82 normally bearing against the rear end thereof to maintain the front end of said lever in engagement with the shoulder 79. In order to disengage said lever end from the shoulder 79 when the foot rest is in raised extended position, it is only necessary to depress the knob 74 to rock the cam 67 against a cam surface 107 formed on the rear end of said lever 80. The foot rest 27 may then be lowered by weight placed thereon, as for instance the weight of one's feet, when one is lying or seated in the chair.

It is thus apparent that I have provided a chair that may be easily converted into position for reclining or sleeping. It should be noted that upon manual depression of the knob 25 to release the pawl 2, the back rest 5 is easily lowered by one sitting in the chair, as by leaning backward, and further that the back rest is brought again into normal position by the tension of the springs 10 upon a second release of the pawl 12. In a similar way depression of the knob 74 permits the spring 50 to throw the foot rest 27 into raised extended position, from which it may be lowered again upon a second depression of the knob 74 by the weight of one's feet. The novel lever arrangement connecting the two tread members of the foot rest to the chair frame permits said rest to be considerably longer than the usual type of foot rest and thus makes it possible to convert the chair into a full length bed or couch when both the back rest and foot rest are in horizontal position.

I am aware that many changes may be made, and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon, otherwise than necessitated by the prior art.

I claim as my invention:

1. A convertible chair including a frame, a foldable foot rest pivoted to said frame, a bar slidably supported on said frame and connected at one end to said foot rest, a spring having one end connected to the other end of said bar and its other end connected to said frame to normally urge said bar outwardly to raise said rest, locking means carried by said bar for locking said bar in outward and inward position, and means on said chair for releasing said lock to allow movement of said rest as desired.

2. A convertible chair including a frame, a two-part foot rest, one of said parts being pivoted to said frame, a bar slidably supported by said frame and connected at one end to one part of said foot rest, the other part of said foot rest being pivoted to said first-named part, a lever connected at one end to said frame and at the other end to said other rest part below the pivotal connection of said two parts for moving the same about the pivotal connection with said first part as said first part is swung about its pivotal connection with said frame.

3. A chair having an extensible foot rest thereon, said rest comprising two sections pivotally connected together, one section pivoted to said chair and arranged to swing between horizontal and vertical positions, levers pivoted at one end to said chair above the pivotal connection of said one section and at the other end pivoted to said other section below and forwardly of the pivotal connection between said two rest sections, and means connected to said first mentioned section for extending said foot rest.

4. A chair having an extensible foot rest thereon, said rest comprising two sections pivotally connected together, one section pivoted to said chair and arranged to swing between horizontal and vertical positions, levers pivoted at one end to said chair above the pivotal connection of said one section and at the other end pivoted to said other section below and forwardly of the pivotal connection between said two rest sections, means connected to said first mentioned section for extending said foot rest, and means for locking said sections in extended and retracted positions.

5. A chair having an extensible foot rest thereon, said rest comprising two sections pivotally connected together, one section pivoted to said chair and arranged to swing between horizontal and vertical positions, levers pivoted at one end to said chair above

the pivotal connection of said one section and at the other end pivoted to said other section below and forwardly of the pivotal connection between said two rest sections, means connected to said first mentioned section for extending said foot rest, and means for locking said sections in extended and retracted positions, said locking means including oscillating cams carried by said extending means, springs arranged to maintain said cams in position to lock, shoulders for preventing movement of said cams when in locking position, and means for disengaging said cams from said shoulders to unlock.

6. A chair having an extensible foot rest thereon, said rest comprising two sections pivotally connected together, one section being pivoted to said chair and arranged to swing between horizontal and vertical positions, a lever pivoted at one end to said chair above the pivotal connection of said one section and at the other end pivoted to said other section of said foot rest below and forwardly of the pivotal connection between said two sections, a bar pivoted to said first mentioned section for moving said rest into extended position, a spring connected to said bar to move the same in a direction to extend said rest, locks carried by said bar for locking it in outward and inward position, and means for controlling said locks to allow movement of said bar.

7. A chair having an extensible foot rest thereon, said rest comprising two sections pivotally connected together, one section being pivoted to said chair and arranged to swing between horizontal and vertical positions, a lever pivoted at one end to said chair above the pivotal connection of said one section and at the other end pivoted to said other section of said foot rest below and forwardly of the pivotal connection between said two sections, a bar pivoted to said first mentioned section for moving said rest into extended position, a spring connected to said bar to move the same in a direction to extend said rest, locks carried by said bar for locking it in outward and inward position, and means for controlling said locks to allow movement of said bar, said means including a rock shaft, an arm on said shaft disposed to disengage a lock, and a lever in the chair structure for rocking said shaft.

8. A convertible chair comprising a frame, an extensible foot rest having a part thereof hinged to said frame, a horizontally movable bar in said frame connected to said foot rest, spring means connected to the frame and to the bar for moving said bar in one direction to extend said foot rest, levers connected to said frame and to said foot rest operable on the raising of said foot rest to extend the same, means on said bar for locking said foot rest in both raised and lowered positions, and means for releasing said locking means comprising concealed levers in said frame terminating in a readily accessible knob.

9. A convertible chair including a frame, an extensible foot rest thereon, the said rest comprising two sections pivotally connected together, one of the sections being pivoted to the said chair and being arranged to swing between a horizontal and a downwardly directed vertical position, means arranged to swing the other section from a position normal to the first-mentioned section to a position in horizontal alinement therewith as the first-mentioned section is swung from the vertical to the horizontal positions, the said means comprising a member pivoted at one end to the said chair above the pivotal connection of the first-mentioned section on the chair and at the other end pivoted to the other section below and forwardly of the pivotal connection between the two sections.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Illinois.

JOHN K. PRASSAS.