

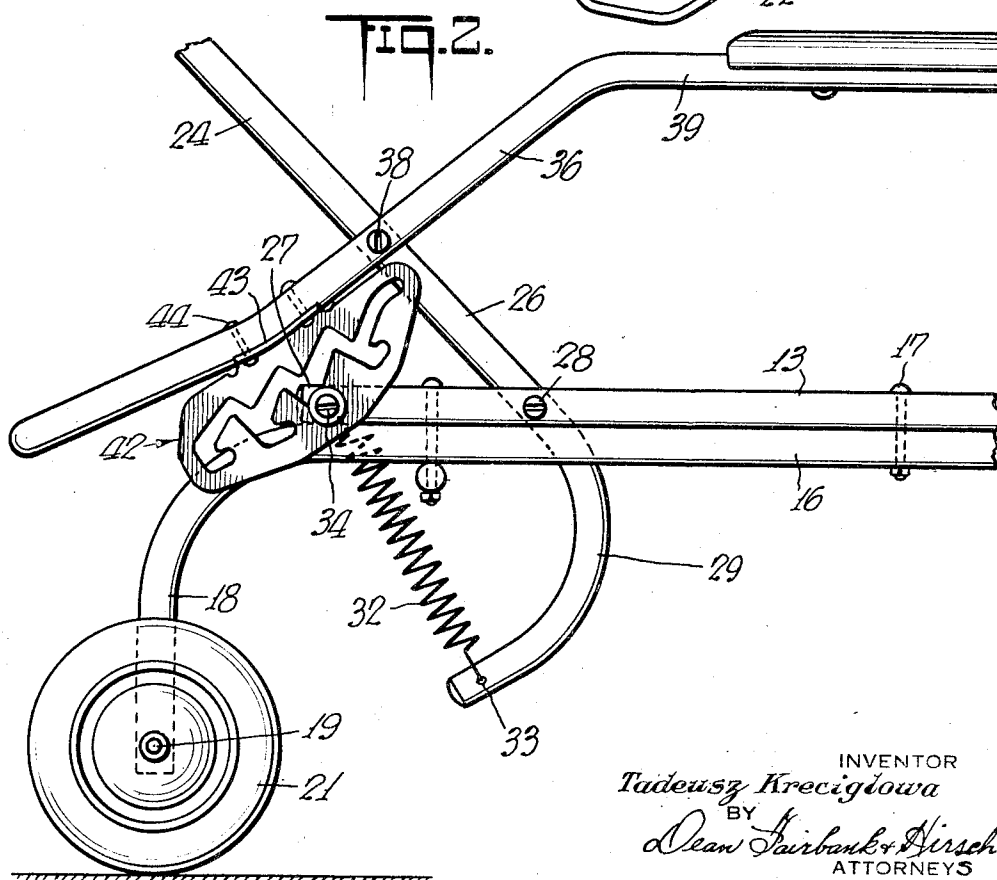
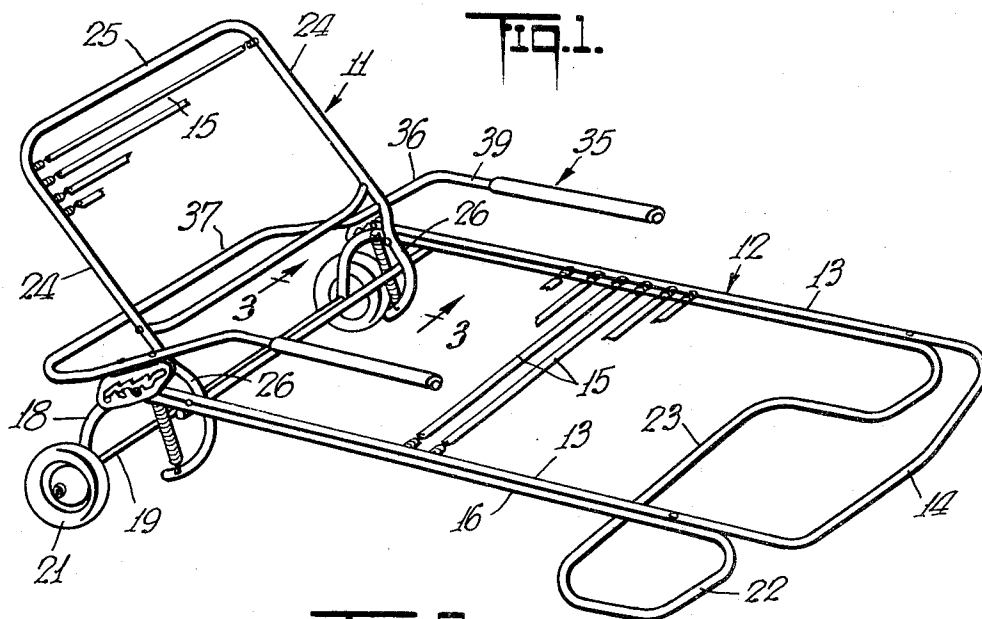
Nov. 5, 1957

T. KRECIGLOWA
ADJUSTABLE BACK REST

2,812,013

Filed Nov. 1, 1955

2 Sheets-Sheet 1



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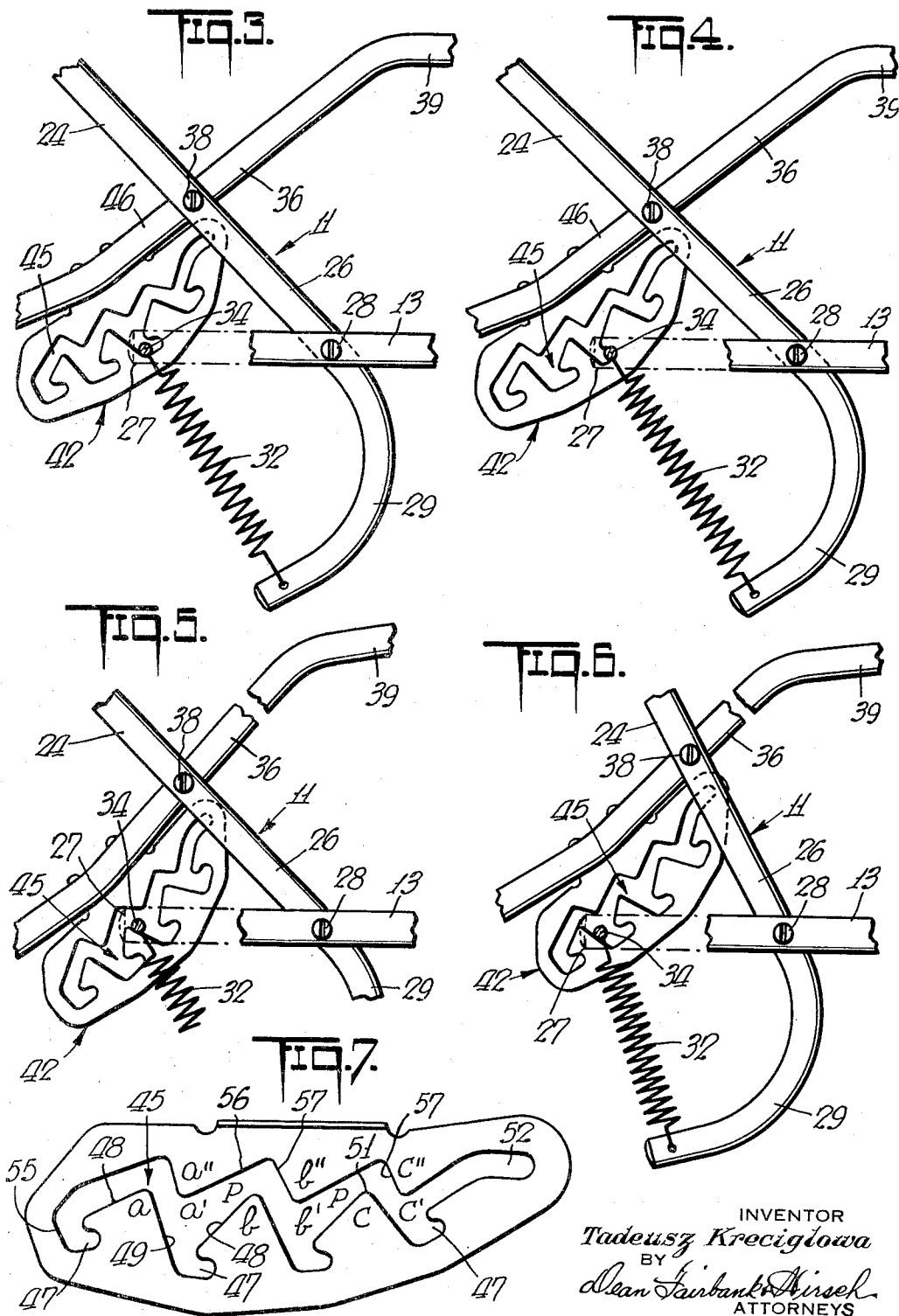
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ADJUSTABLE BACK REST

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Application November 1, 1955, Serial No. 544,104

12 Claims. (Cl. 155—162)

This invention relates to the art of reclining chairs and more particularly to the adjustable back rest thereof.

It is among the objects of the invention to provide a chair and more particularly a chaise lounge of the type having an adjustable back rest and an associated arm rest, which may be made substantially entirely of light weight materials such as tubular metal stock and sheet metal stock and may readily be fabricated at low cost and which affords ready setting of the back rest to a desired angle of inclination with a relatively simple manipulation by the occupant involving only a slight up and down motion of the arm rests, without need for the occupant of the chair to rise therefrom or to pull or push on such arm rests and which will dependably remain in such set position without likelihood of dislodgment therefrom and which, when adjusted to decrease the angle of inclination of the back rest, will move forward only a predetermined amount at each adjustment to avoid the possibility of impact by the back rest against the back of the chair occupant.

According to the invention, these objects are accomplished by the arrangement and combination of elements hereinafter described and particularly recited in the claims.

In the accompanying drawings in which are shown one or more of various possible embodiments of the several features of the invention,

Fig. 1 is a perspective view of a chaise lounge according to the invention with parts broken away,

Fig. 2 is a fragmentary side elevational view on a greatly enlarged scale showing the locking mechanism,

Fig. 3 is a view taken along line 3—3 of Fig. 1 showing one position of the locking mechanism,

Figs. 4 to 6 are views similar to Fig. 3 showing the locking mechanism in various positions, and

Fig. 7 is a side elevational view on an enlarged scale of the locking plate.

Referring now to the drawings, the adjustable back rest 11 is illustratively shown incorporated in a chaise lounge which comprises a seat portion 12 having a substantially U-shaped frame, desirably formed from tubular metal stock, with a pair of elongated parallel legs 13 joined by a cross piece 14 at their front ends and which has resiliently mounted strips 15 extending between the legs 13 to carry a mattress (not shown).

A supporting member which also is substantially U-shaped, has its parallel legs 16 positioned respectively beneath the legs 13 of the frame and affixed thereto as by bolts 17. The rear ends of the legs 16 are curved downwardly as at 18 and an axle 19 extending transversely through suitable openings in the extremities of said curved ends 18 mounts rollers 21. The front ends of the legs 16 are also curved downwardly as at 22 and are connected by a cross piece 23, the supporting member thus retaining the frame in substantially horizontal position on the floor.

The back rest 11 also desirably comprises a substantially U-shaped frame, the parallel legs 24 of which are joined at their upper ends by a cross piece 25 and

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resiliently mounted strips 15 also extend between the legs 24 of the back rest 11 to support the rear portion of the mattress.

The spacing between the upper portions of the legs 24 of the back rest 11 is substantially the same as the spacing between the legs 13 of the frame and the lower portions of the legs 24 are bent inwardly as at 26 so that such lower portions may be straddled by the legs 13 of the frame.

The inwardly bent portions 26 of the legs 24 of the back rest 11 are pivotally mounted to the legs 13 of the frame near the rear ends 27 of the latter as by bolts 28 and are bent downwardly as at 29 so as to extend at substantially right angles to said legs 24.

The back rest is normally urged upwardly by means of a pair of coil springs 32 affixed respectively at one end as at 33 to the extremities of the downwardly bent portions 29 and at their other ends to bolts 34 which extend through the legs 13 of the frame near the ends 27 thereof.

Pivotally mounted to the back rest 11 is an arm rest 35 which desirably comprises a substantially U-shaped frame having parallel legs 36 which straddle the legs 24 of the back rest and which are joined at their rear ends by a cross piece 37. The legs 36 are pivoted to the legs 24 as by means of bolts 38 and the portions 39 of the legs 36 extending forwardly of the pivots 38 are desirably bent so as to extend substantially parallel to the legs 13 of the frame to serve as a convenient support for the arms of the chair occupant.

Means are provided releasably to lock the back rest 11 in any desired position of adjustment. To this end a pair of elongated locking plates 42 is provided, desirably stamped from sheet metal stock, each of which has a flange 43 at its upper edge extending at right angles to the plate 42 and affixed as by riveting as at 44 to the respective legs 36 of the arm rest 35 to the rear of the pivots 38.

The plates 42 which depend from the legs 36 straddle the frame and extend over the bolts 34 which protrude through a slot 45 in the plate to define a stop. As is clearly shown in Fig. 7 the slot 45 is substantially in the form of a zig-zag to define a locking conformation and extends substantially the length of plate 42. The lower edge of the slot 45 has a plurality of substantially triangular projections, illustratively three in number designated *a*, *b* and *c*, rising therefrom and defining V-shaped recesses *a'*, *b'* and *c'*. Each of the projections *a*, *b* and *c* has a notch 47 near its base extending inwardly from the rear surface 48 thereof substantially parallel to said base and the front surface 49 of each projection is in communication with the immediately succeeding notch 47.

The upper edge of slot 45 has a plurality of substantially triangular projections *a''*, *b''* and *c''* which depend therefrom and extend into the respective V-shaped recesses *a'*, *b'* and *c'* below the apices 51 of the triangular projections *a*, *b* and *c*.

Thus, as is clearly shown in Fig. 7, a plurality of communicating passageways are defined by the slot and the ends of each passageway *P* defined by the portions of the slot 45 between the rear surface 48 of projections *b*, *c* and the front surface 56 of projections *a''*, *b''*, for example, are opposed to the front surface 49 and rear surface 57 of projections *a*, *b''* and *b*, *c''*.

The forward end of the slot 45 is substantially arcuate as at 52 being concave on its lower edge and the open end of such arcuate conformation 52 is opposed to the front surface 49 of projection *c*. The upper edge of the slot 45 at its rear end extends substantially parallel to the rear surface 48 of projection *a* and then is curved downwardly as at 55 to the rearmost notch 47.

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It is of course to be understood that more or less projections could be provided depending upon the number of adjustments required of the angle of inclination of the back rest.

In the operation of the unit above described with the chaise lounge unoccupied and with the outer end of each of the bolts 34 in the bottom of V-shaped recess b' for example, as shown in Fig. 3, the lower end of the front surface 49 of projection b will be retained against the bolt 34 by the tendency of the arm rest 11 and the plate 42 affixed thereto to move forward under the urging of the coil spring 32. Hence, the back rest 11 will be releasably locked in position. When the unit is occupied and the user leans against the back rest 11, the latter will move back slightly until the end of the notch 37 between projections b and c abuts against the bolt 34 as shown in Fig. 4 to enhance the locking action.

If the occupant desires to move the back rest 11 to a greater inclination, he need merely move forward slightly so that he does not press against the back rest 11. As a result the spring 32 will cause the back rest 11 to pivot forward slightly until the front surface 49 of projection b abuts against the bolt 34 as shown in Fig. 3. Thereupon, the occupant of the unit need merely raise the free ends 39 of the arm rest 35, which, as shown in Fig. 5, will cause the plate 42 to move downwardly, and then lean back against the back rest 11 until the rear surface 57 of projection c' abuts against the bolt 34. This will restrain further rearward movement of the back rest 11 and the occupant then need merely press down on the ends 39 of the rest 35 until the bolt 34 is against the end of the foremost recess 47 to lock the back rest 11 in set position.

To raise the back rest 11 from the position shown in Fig. 4, the user need merely lean forward slightly to bring the back rest to the position shown in Fig. 3 and thereupon slightly raise the front ends 39 of the arm rest 11. When the apex 51 of the projection b passes the bolt 34, the action of the springs 32 will pivot the back rest 11 and arm rest 35 forward until, as shown in Fig. 6, the front surface 49 of the projection a abuts against the bolt 34 to stop further forward movement of the back rest 11 under the urging of springs 32. Thereupon, the user need merely press down on the ends 39 of the arm rest 35 and lean against the back rest 11 which will cause the end of the recess 37 between projections a and b to abut against the bolt to lock the back rest in position.

It is apparent from the foregoing that the back rest 11 will be dependably locked in any position of adjustment and may readily be moved to a greater inclination and as readily restored to a lesser inclination without likelihood of the back rest moving more than one notch forward which might cause the back rest to strike the user with considerable impact.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. An article of the character described comprising a seat portion, a back rest pivotally mounted to said seat portion, an arm rest pivotally mounted to said back rest, resilient means normally urging said back rest in a forward direction about its pivotal mount, complementary locking means carried by said arm rest and said seat portion, said locking means comprising a locking plate having an elongated substantially zig-zag slot therethrough defining a plurality of upstanding spaced projections rising from the lower edge of said slot and a plurality of

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projections depending from the upper edge of said slot and extending slightly into said spaces, said projections defining a locking conformation and a stop member extending through said slot to coact with said locking conformation.

2. The combination set forth in claim 1 in which said locking plate is affixed to said arm rest and said stop member is affixed to said seat portion.

3. An article of the character described comprising a seat portion, a back rest pivotally mounted to said seat portion, an arm rest pivotally mounted to said back rest and extending forwardly and rearwardly of the latter, resilient means normally urging said back rest in a forward direction about its pivotal mount, a locking plate affixed to the portion of the arm rest extending rearwardly of its pivotal mount, said plate having an elongated slot therethrough defining a locking conformation, a stop member affixed to said seat portions and extending through said slot, said locking conformation comprising a plurality of substantially triangular upstanding projections rising from the lower edge of said slot and defining V-shaped recesses and a plurality of substantially triangular projections depending from the upper edge of said slot and extending into said recesses.

4. The combination set forth in claim 3 in which the rear surface of each of the upstanding projections has a transverse notch near its base.

5. The combination set forth in claim 3 in which said slot is arcuately shaped near the front end of the locking plate, said arcuate portion of said slot being concave on its lower surface and having its open end opposed to the front surface of the foremost upstanding projection.

6. The combination set forth in claim 3 in which the rear surface of each of the upstanding projections has a transverse notch near its base and said slot is arcuately shaped near the front end of the locking plate, said arcuate portion of said slot being concave on its lower edge and having its open end opposed to the front surface of the foremost upstanding projection.

7. An article of the character described comprising a substantially rectangular seat portion having a pair of spaced parallel legs defining the sides thereof, a substantially U-shaped back rest having a pair of parallel legs pivotally connected near their lower ends to the legs of said seat portion, a substantially U-shaped arm rest having a pair of parallel legs pivotally connected respectively to the legs of said back rest above the pivotal mount of the latter to said seat portion, a portion of each of the legs of said arm rest extending rearwardly of the pivotal mount thereof, resilient means normally urging said back rest in a forward direction about its pivotal mount, a locking plate affixed to the rearwardly extending portion of at least one of the legs of said arm rest, and depending therefrom in a plane parallel to the length of said leg, said plate having an elongated slot therethrough defining a locking conformation, a stop member affixed to said seat portion and extending through said slot, said locking conformation comprising a plurality of upstanding projections rising from the lower edge of said slot defining recesses therebetween and a plurality of projections depending from the upper edge of said slot and extending slightly into said recesses.

8. The combination set forth in claim 7 in which each of said projections is substantially triangular having its base at the edge of said slot.

9. The combination set forth in claim 7 in which each of said projections is substantially triangular having its base at the edge of said slot and the rear surface of each of the upstanding projections has a transverse notch near its base.

10. The combination set forth in claim 7 in which the lower end of each of the legs of said back rest extends below the pivotal mount thereof and is downwardly bent and said resilient means comprises a coil spring

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affixed at one end to the extremity of said downwardly bent end and at its other end to said seat portion.

11. The combination set forth in claim 7 in which the spacing between the upper portion of the legs of said back rest is substantially the same as the spacing between the legs of said seat portion, the lower portions of said back rest legs are bent inwardly to be straddled by the legs of said seat portion and the inwardly bent portions of said back rest legs are pivotally connected to said seat portion.

12. An article of the character described comprising a seat portion, a back rest pivotally mounted to said seat portion, an arm rest pivotally mounted to said back rest, resilient means normally urging said back rest in a forward direction about its pivotal mount, complementary locking means carried by said arm rest and said seat portion, said locking means comprising a plate having an

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elongated slot conformed to define a plurality of communicating passageways, the ends of each of said passageways having an abutment opposed thereto and a stop member extending through said slot adapted to coact with said abutments to restrain movement of said back rest.

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