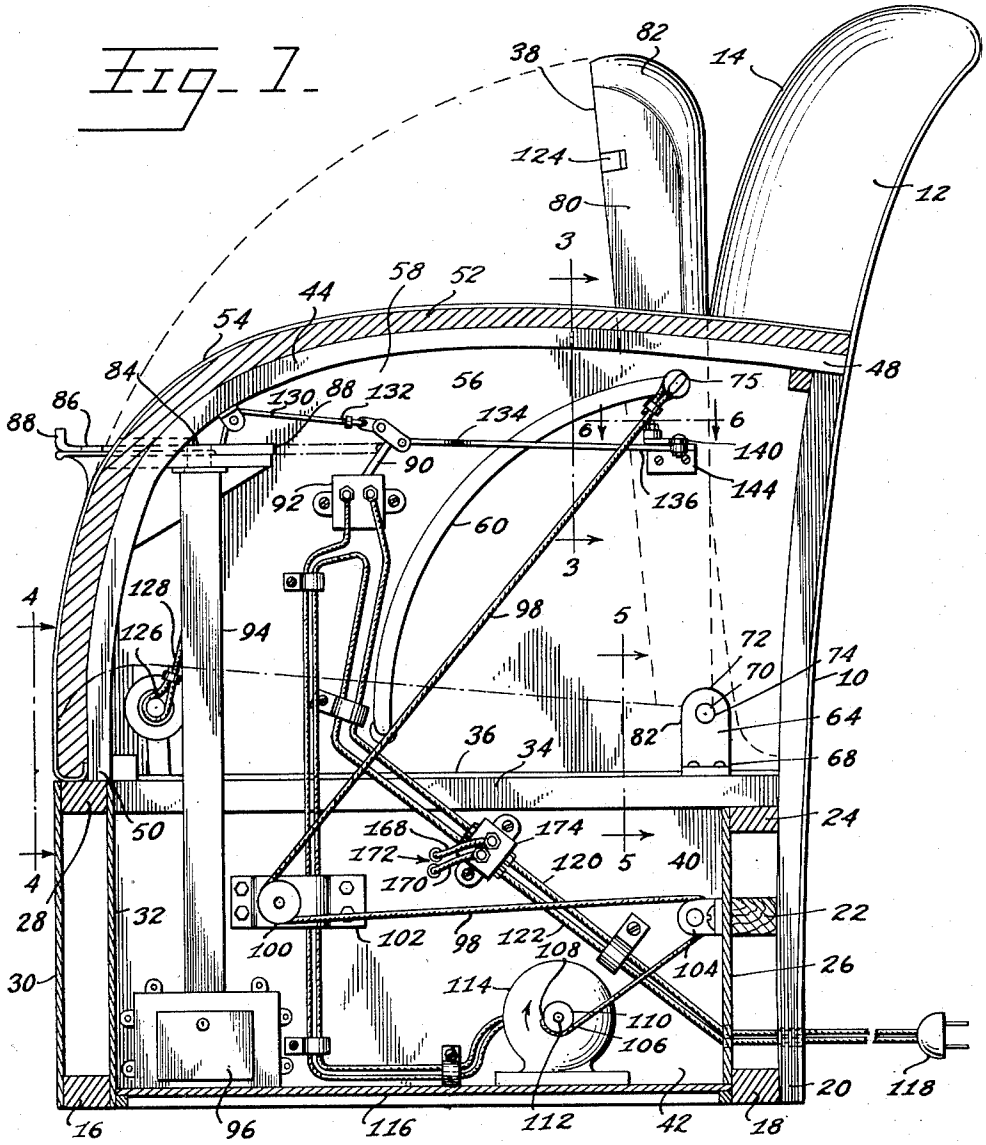
Aug. 1, 1950 L. STACY ET AL 2,517,048

COIN-CONTROLLED EASY CHAIR

Filed Oct. 29, 1946 3 Sheets-Sheet 1

Fig. 1.



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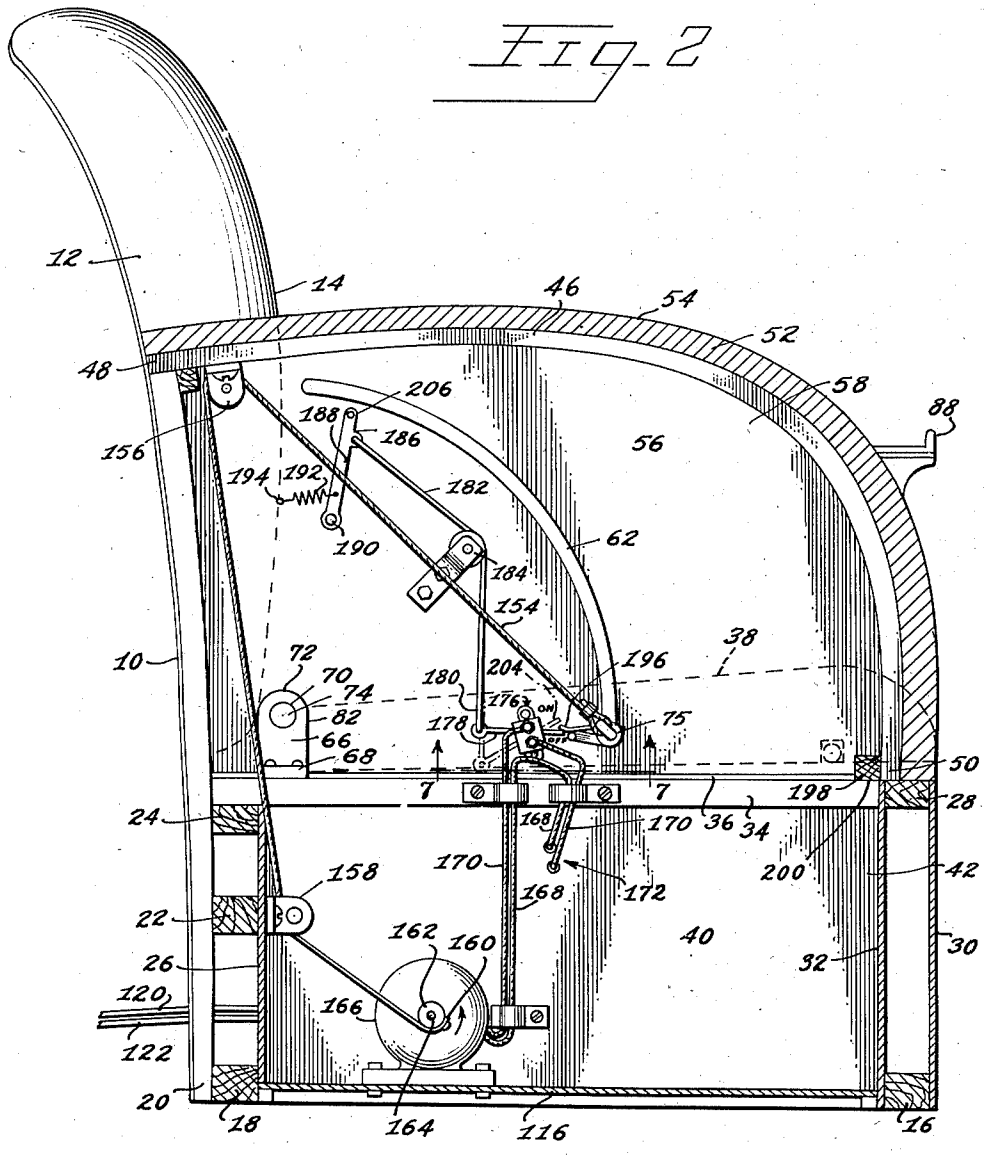
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Fig. 2



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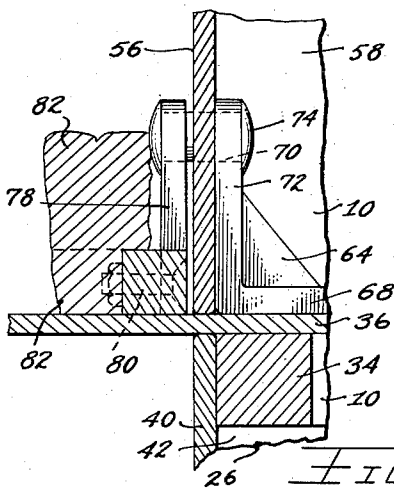


Fig. 5.

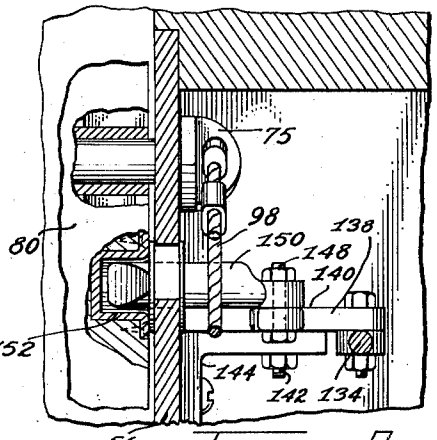


Fig. 3.

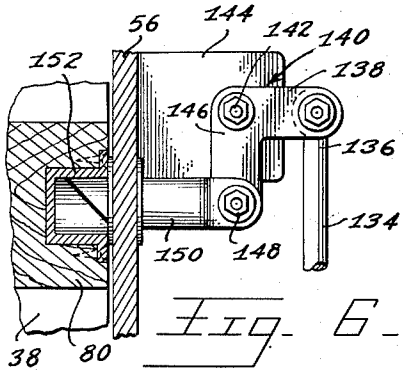
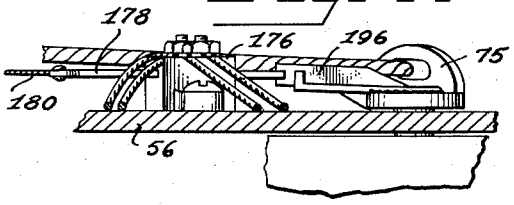


Fig. 6.

Fig. 7.



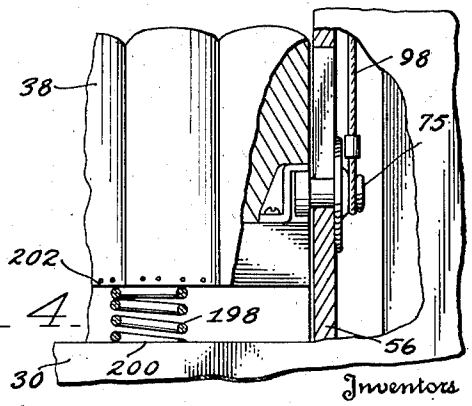


Fig. 4.

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UNITED STATES PATENT OFFICE

2,517,048

COIN-CONTROLLED EASY CHAIR

Luther Stacy and Remus E. Holbrook, Cromona, Ky.; said Stacy assignor to said Holbrook

Application October 29, 1946, Serial No. 706,392

4 Claims. (Cl. 155—120)

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This invention relates to coin controlled chairs.

An object of the invention is to provide an upholstered chair having coin controlled means whereby it may be used only upon depositing a coin therein.

Another object of the invention is to provide an easy chair the seat of which is tiltable downward for use from a substantially vertical locked position, upon deposit of a coin into a seat unlocking device.

Still another object of the invention is to provide an upholstered chair having coin controlled locking means, and in which the seat is automatically upraised to locked position when a patron rises from the chair.

A further object of the invention is to provide an upholstered normally locked chair having coin controlled seat unlocking means, said chair being further characterized by simplicity of design, inexpensiveness of manufacture, and effectiveness in operation.

Other objects and advantages of the invention will become apparent from the following description of a preferred embodiment thereof as illustrated in the accompanying drawings, and in which,

Figure 1 is a left side elevation of our improved easy chair, the view being sectioned to show the interior construction,

Figure 2 is a right side elevation of the chair shown in Figure 1, the view being sectioned to show the interior construction,

Figure 3 is a sectional elevation taken on line 3—3 of Figure 1,

Figure 4 is an elevation taken on line 4—4 of Figure 1, and partly broken out to show the construction,

Figure 5 is a sectional elevation taken on line 5—5 of Figure 1,

Figure 6 is a sectional plan view taken on line 6—6 of Figure 1, and

Figure 7 is a sectional plan view taken on line 7—7 of Figure 2.

In order that the invention may be clearly understood, reference may now be had to the drawings, in which like reference characters denote similar parts throughout the several views. As shown, there is a chair having an upstanding seat back member 10 formed of suitable material such as wood or metal, in any suitable manner, and arched or curved backwardly to conform to the body of the occupant. A back cushion member 12 is carried upon the front face of the back member, the cushion being suitably upholstered to give it the necessary resiliency for bodily comfort, as the occupant's back leans against its forward surface 14.

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The chair has front and rear lateral base rails 16 and 18 as shown in Figure 1, the latter rail being attached to the bottom end portion 20 of the back member 10. An intermediate lateral support rail 22, and an upper lateral support rail 24 are also attached to the back member 10 above the bottom rail 18 as shown, a plywood lateral rear panel 26 being nailed or otherwise attached to the three rails 18, 22 and 24. A front upper lateral support rail 28 is supported above the rail 16 between spaced parallel upstanding panels 30 and 32 which are carried by the lower rail 16.

Left and right upper side rails 34 are supported at their ends upon the upper lateral rails 28 and 24, thus furnishing a support frame for a horizontal platform panel 36 which rests upon the frame members as shown so as to form a support platform for the chair seat 38 when in horizontal seating position. Vertical inner parallel side panels 40 are secured against the inner vertical faces of the left and right rails 34 and the other adjacent portions of the platform support frame, thus forming left and right hollow chambers 42 beneath each chair arm for the installation of equipment for raising and lowering the seat 38 as will be further described below. As shown in Figure 5, it will be noted that the rails 34 are not as wide as the chamber 42, in order to allow operating cables and other devices to pass freely upward and downward therepast.

Left and right chair arm rails 44 and 46 are secured at their upper rearward ends 48 to the chair back 10 in any suitable manner, and have their forward lower end portions 50 secured to the upper front lateral rail 28, the arm rails being suitably covered with padding 52 and outer fabric covering material 54. Upper inner panels 56 are secured to the inner sides of the left and right chair arms as shown, thus forming left and right upper chair arm chambers 58 below each arm rail 44 and 46 respectively, the upper chambers communicating with the lower chambers 42 past the sides of the rails 34.

The upper inner panels 56 have arcuate slots 60 and 62 formed therein as illustrated. Left and right chair seat support brackets 64 and 66 have their horizontal legs 68 secured to the rails 34 by bolts or screws, and have bearing apertures 70 formed in their vertical legs 72 for the reception of pivot pins 74 the shanks of which also extend through brackets 78 carried on the side rails 80 of the chair seat 38, the seat being thus pivotally supported along its rearward lower edge

82. The movable seat has a frame including front and rear lateral rails connected at their ends by left and right side rails, and is suitably upholstered and padded as at 82, and covered with fabric or the like. Guide pins 75 extend outward from the side rails 80 of the seat, and into the guide slots 60 and 62 respectively.

It is apparent that the seat is thus tiltable from its upward or locked position as seen in full lines in Figure 1, downward counterclockwise to the substantially horizontal dotted line unlocked position shown in the same view. As will be described, mechanism is provided for moving the seat from locked to unlocked position upon deposit of a coin, and for moving it back to locked position when the occupant leaves the chair. As shown in Figure 1, there is a coin slot 84 with an aperture 86 for the reception of a coin in a plunger, the plunger being movable to the right so as to cause its right hand end 88 to bear against the toggle lever 90 of a toggle switch 92 secured to the side panel 56, as the coin drops into the chute 94, and into the coin box 96 therebelow.

A pull cable 98 has one end attached to the left guide pin 75 shown in Figure 1, extends down through the upper and lower left side chambers below the left arm rail 44, around a pulley 100 mounted on a bracket 102 on side panel 40, thence around a second pulley 104, with the lower end 106 of the cable being secured to a point 108 on a ratchet type pulley 110 which is fast on the drive shaft 112 of a motor 114. The motor 114 is supported on a bottom or floor panel 116, and is powered by current derived from the power lines through a plug 118 connected through wires 120 and 122, the toggle switch 92 being interposed in wire 120 as shown, for making and braking the circuit to stop or start the motor.

When the motor 114 turns in a clockwise direction, it is apparent that the rope 98 will be pulled downward by the motor, tilting the seat 38 downward to substantially horizontal position upon the seat support platform 36. The seat is provided with a stud 124, which, as the seat approaches the horizontal position depresses the member 126, carried on the panel 56, thus depressing the lower end 128 of the switch opening cable 130, the upper end 132 of which is connected to the toggle lever 90, thus pulling the toggle lever counterclockwise to open the switch 92, thus stopping the seat lowering motor 114.

A rod 134 is also attached at its left end to the toggle lever 90, and has its right hand end 136 connected to one arm 138 of a bell crank lever 140 which is pivotally mounted on a pin 142 carried on a bracket 144 secured to the panel 56. The other leg 146 of the lever 140 is pinned at 148 to a locking plunger 150 which is slidable to the left as seen in Figure 6 upon a pull of the rod 134 to move into a socket 152 in the seat rail 39. When the seat is in upraised position, this locks the seat against being moved downward until a coin is inserted into the receptacle 86 and the lever 88 moved against the toggle lever 90 to push the rod 134 to the right, withdrawing the locking plunger 150 from the socket, and unlocking the seat for downward movement.

As seen in Figure 2, a pull cable 154 has one end attached to the right hand guide pin 75, the cable being looped through a pulley 156, thence downward over a pulley 158, with its lower end 160 secured to and wound around a ratchet pulley 162 on shaft 164 of the seat raising motor 166 mounted on a floor panel 116, the motor being rotatable counterclockwise to raise the seat from horizontal position to upstanding position as shown in full lines in Figure 1. The motor is driven by power derived through wires 168 and 170 which through holes at 172 in the panels 40 and 42 and across the intervening space to be connected at junction box 174 to the wires 120 and 122 which lead to the inlet plug 118.

As seen in Figure 2, the switch 176 is carried on panel 56 and is interposed in the power wire 170, so as to stop and start the motor 166. The toggle switch 176 is operated by means of a toggle lever 178 extending therethrough, the left hand end of the toggle lever 178 as seen in Figure 2, having the lower end 180 of a pull cable 182 attached thereto, the cable extending over a pulley 184 attached to the panel 56. The upper end of the cable 182 is attached to the distal end 186 of a motor stopping lever 188 pivoted at 190 to the panel 56. The spring 192 has its left end attached to the panel at 194 and its right end attached to the lever 188 so as to bias it in a counterclockwise direction, serving to normally maintain the toggle lever 178 of the switch in the full line or switch open position shown, that is, maintaining the motor in stopped position.

A leaf spring 196 is attached at its right hand end as seen in Figures 2 and 7, to the guide pin 75 and is movable therewith, the spring projecting out to the left from the pin as seen in the views. Referring now to the right hand side of Figure 2 and to the view shown in Figure 4, it will be observed that one or more coil springs 198, which rest upon the upper surface of the seat support platform at 200 near the front edge thereof, so as to furnish resilient upward support for the front edge 202 of the seat 38 when it is lowered by the motor 114, the front edge of the seat being thus tilted or elevated about an inch above the platform when no one is sitting upon it. In reaching this position, the leaf spring 196 bears down against the other end 204 of the toggle switch 176, turning it to open position, and stopping the motor 166. When a person sits upon the seat, it is depressed further to rest upon the seat platform 200, causing the spring 196 to be carried downward with its outstanding end sprung around the end of the toggle lever arm so as to come below the arm 204.

Now, when the occupant of the seat gets up to leave the seat, the springs 198 elevate the seat about an inch, thus causing the leaf spring 196 to move upwards to the dotted line or closed circuit position, starting the motor 166, and causing the seat to be pulled upwards to its upraised position, where the locking plunger 150 in Figure 6 may enter the socket 152 to lock it in upraised position. When the leaf spring 196 is thus carried by the seat past the extension 206 of the lever 188, it causes the lever to be moved in counterclockwise direction about pivot 190, pulling on cable 182 to pull the toggle lever arm 178 in a clockwise direction and turning the switch 176 to open circuit position, stopping the motor 166.

It will thus be observed that our invention discloses a fully automatic coin operated easy chair which may be installed in railroad stations, waiting rooms, trains, and other places for use by patrons upon deposit of a coin. Although we have described a preferred embodiment of our invention in specific terms, it is to be understood that various changes may be made in size, shape, materials and arrangement without departing

from the spirit and scope of the invention as claimed.

We claim:

1. A coin controlled chair comprising a chair frame, a chair seat pivoted at its rear end on said chair frame, a first pull cable having one end connected to a part of said seat forward of its pivot, a first motor having a ratchet pulley around which the other end of said first pull cable is wound whereby said seat is swung upwardly to a vertical non-usable position upon operation of said first motor, said seat being formed with a locking socket, a locking bolt mounted on said chair frame, means on said chair frame operable by upward swinging of said seat for stopping said first motor and projecting said bolt into said socket as said seat reaches its vertical position, a second pull cable having one end connected to a part of said seat forward of its pivot, a second motor having a ratchet pulley around which the other end of said second pull cable is wound whereby said seat can be swung downwardly to horizontal seating position upon retraction of said bolt and operation of said second motor, coin controlled means operable for retracting said bolt from said socket for releasing said seat to be swung downwardly from its vertical position and for starting said second motor, means operating between said seat and said chair frame for stopping said second motor as said seat reaches its horizontal seating position.

2. A coin controlled chair comprising a chair frame, a chair seat pivoted at its rear end on said chair frame, a first pull cable having one end connected to a part of said seat forward of its pivot, a first motor having a ratchet pulley around which the other end of said first pull cable is wound whereby said seat is swung upwardly to a vertical non-usable position upon operation of said first motor, said seat being formed with a locking socket, a locking bolt mounted on said chair frame, means on said chair frame operable by upward swinging of said seat for stopping said first motor and projecting said bolt into said socket as said seat reaches its vertical position, a second pull cable having one end connected to a part of said seat forward of its pivot, a second motor having a ratchet pulley around which the other end of said second pull cable is wound whereby said seat can be swung downwardly to horizontal seating position upon retraction of said bolt and operation of said second motor, coin controlled means operable for retracting said bolt from said socket for releasing said seat to be swung downwardly from its vertical position and for starting said second motor, means operating between said seat and said chair frame for stopping said second motor as said seat reaches its horizontal seating position, and means conditioned for operation by the weight of a person sitting on said seat in its horizontal position and arranged to operate when the weight of such person is removed from the seat for starting said first motor whereby said seat is swung upwardly to its vertical non-usable locked position.

3. A coin controlled chair comprising a chair frame, a seat pivoted on said chair frame to tilt from a vertical non-usable position to a horizontal seating position and return, a first motor, a first ratchet assembly including an endwise movable member operatively connected to said seat and to said first motor whereby said seat is swung upwardly to its vertical non-usable position from its horizontal sitting position upon operation of said first motor and can be swung downwardly to its horizontal position from its vertical position independently of said first motor, a bolt socket on said seat, a bolt mounted on said chair frame, means on said chair frame operable by upward swinging of said seat for stopping said first motor and projecting said bolt into said socket as said seat reaches its vertical position, a second motor, a second ratchet assembly including an endwise movable member operatively connected to said seat and to said second motor whereby said seat is swung downwardly from its vertical position to its horizontal sitting position upon operation of said second motor and retraction of said bolt from said socket, coin controlled means operable for retracting said bolt from said socket and starting said second motor, and means operating between said seat and said chair frame for stopping said second motor as said seat reaches its horizontal seating position.

4. A coin controlled chair comprising a chair frame, a seat pivoted on said chair frame to tilt from a vertical non-usable position to a horizontal seating position and return, a first motor, a first ratchet assembly including an endwise movable member operatively connected to said seat and to said first motor whereby said seat is swung upwardly to its vertical non-usable position from its horizontal sitting position upon operation of said first motor and can be swung downwardly to its horizontal position from its vertical position independently of said first motor, a bolt socket on said seat, a bolt mounted on said chair frame, means on said chair frame operable by upward swinging of said seat for stopping said first motor and projecting said bolt into said socket as said seat reaches its vertical position, a second motor, a second ratchet assembly including an endwise movable member operatively connected to said seat and to said second motor whereby said seat is swung downwardly from its vertical position to its horizontal sitting position upon operation of said second motor and retraction of said bolt from said socket, coin controlled means operable for retracting said bolt from said socket and starting said second motor, and means operating between said seat and said chair frame for stopping said second motor as said seat reaches its horizontal seating position, and means conditioned for operation by the weight of a person on said seat and operable by subsequent removal of the weight of such person from said seat for starting said first motor for returning said seat to its vertical nonusable and locked position.

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