

March 7, 1950

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2,500,124

RETRACTING TYPE THEATER CHAIR

Filed Aug. 22, 1946

2 Sheets-Sheet 1

Fig. 1

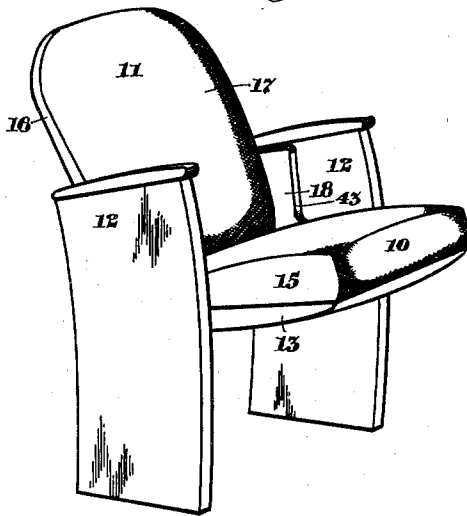


Fig. 2

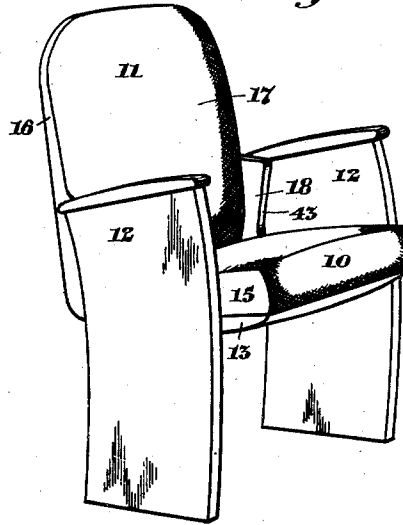


Fig. 3

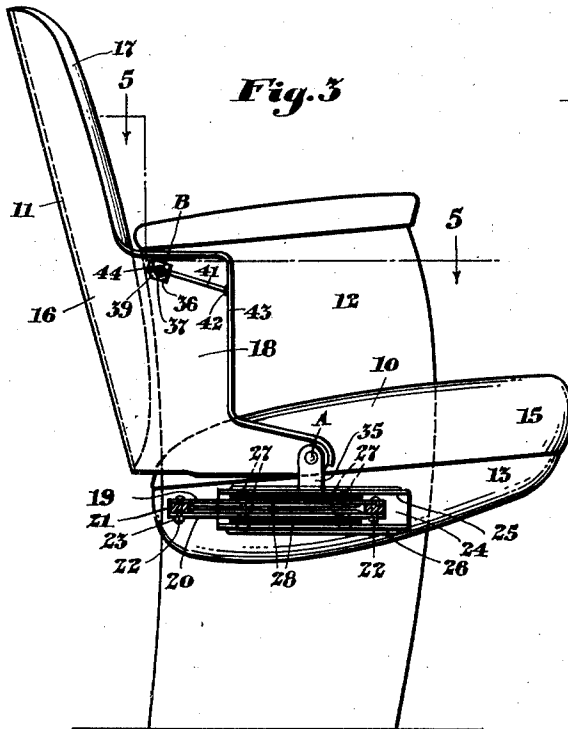
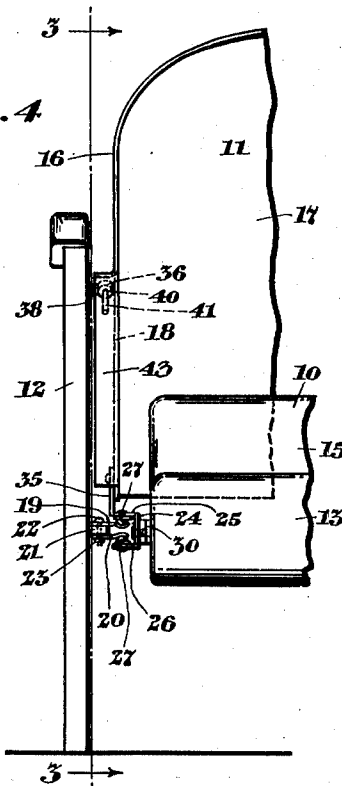


Fig. 4



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Fig. 5.

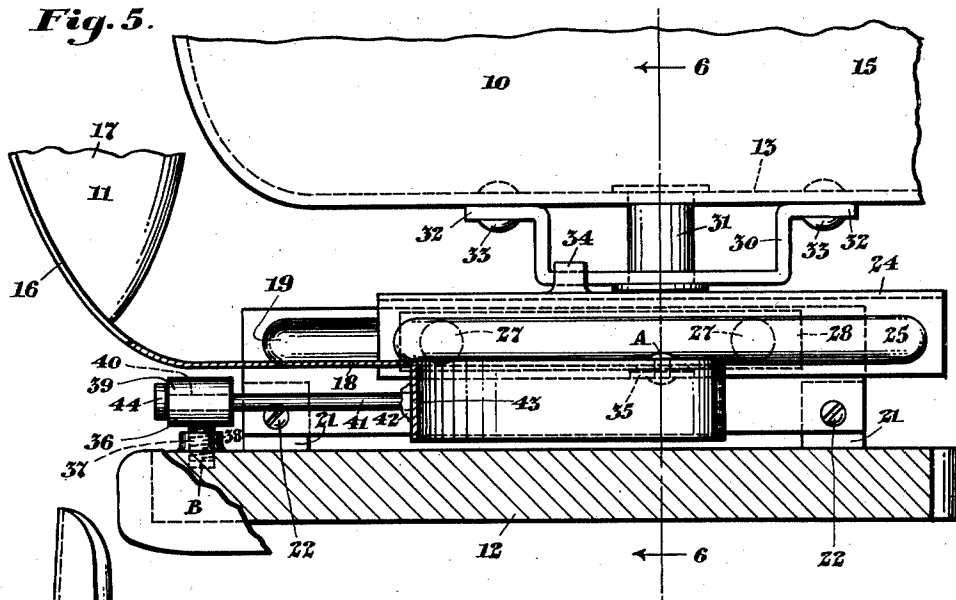


Fig. 7

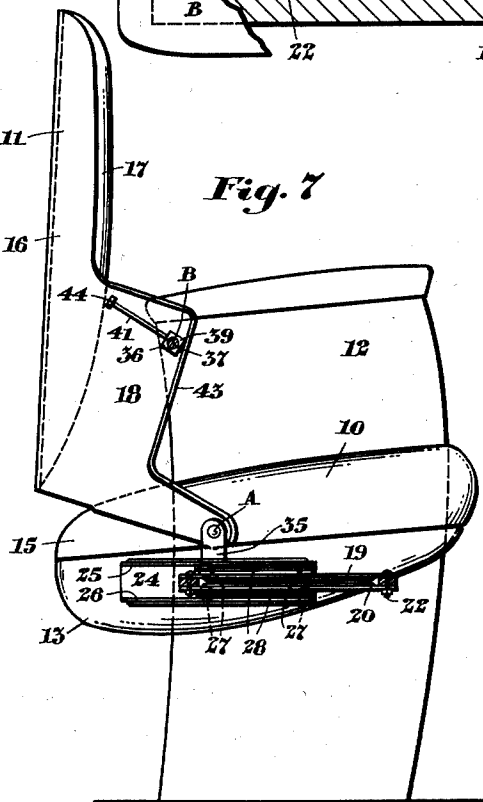
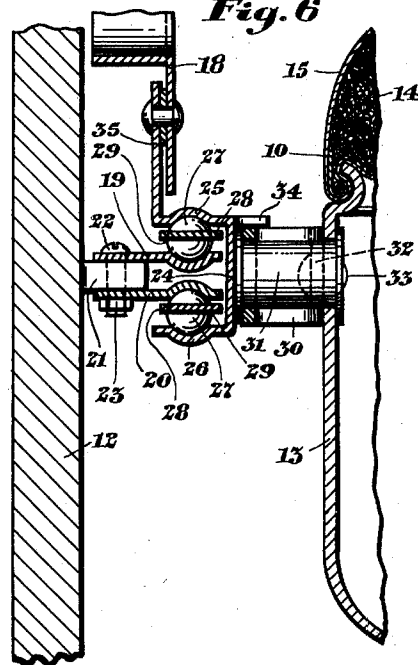


Fig. 6



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RETRACTING TYPE THEATER CHAIR

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7 Claims. (Cl. 155—115)

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The present invention relates to chairs and more particularly to chairs of the retracting type for installation in theaters, auditoriums and the like.

The primary objects of the invention are to provide an improved chair of the retracting type which the occupant may move rearwardly while remaining in a sitting position in order to permit other theater patrons to pass in front of him; to provide such a chair having mounting and operating mechanism which is simple and sturdy in construction; to provide such a chair which is particularly quiet in operation; to provide such a chair in which the mounting and operating mechanism is concealed from view; to provide such a retracting chair the moving parts of which may be easily and inexpensively replaced; and in general to provide such a chair which is easy to operate, economical to manufacture, and attractive in appearance.

An illustrative embodiment of the invention is shown in the accompanying drawings, wherein:

Figure 1 is a perspective view of a retracting chair constructed according to the present invention, and shows the chair seat and back in their normal, forward positions of occupancy;

Figure 2 is a similar perspective view of the chair and shows the chair seat and back in their rearwardly retracted positions;

Figure 3 is a vertical sectional view of the chair taken on line 3—3' of Figure 4;

Figure 4 is a fragmentary front elevational view of the right hand side of the chair;

Figure 5 is an enlarged, fragmentary, horizontal sectional view of parts of the chair, taken on line 5—5' of Figure 3;

Figure 6 is a fragmentary, vertical sectional view of the same taken on line 6—6' of Figure 5; and

Figure 7 is a vertical sectional view of the chair similar to Figure 3 and shows the various parts of the chair in their rearwardly retracted positions.

Referring now in detail to those drawings, the retracting chair there shown generally comprises a chair seat 10 and a chair back 11 mounted for retracting and returning movement upon a frame which comprises spaced, upright, chair-supporting standards 12 which may be secured to the floor by any conventional means (not shown). As shown, the only rigid connection between the standards is the floor upon which they are mounted, but if desired the standards may be connected by a suitable cross-tie located beneath the seat. As herein used, the word "frame" is in-

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tended to include either spaced standards as shown, or a unitary structure.

The chair seat 10 and chair back 11 are pivotally connected for relative movement as hereinafter more fully described, and they thus constitute a seat and back assembly which may be installed as a unit on preinstalled standards. The seat is of conventional upholstered construction and comprises a sheet metal seat foundation or pan 13 on which is assembled padding 14 and an upholstery covering 15 (see Figure 6). The chair back 11 comprises a sheet metal back panel 16 on which an upholstered cushion 17 is assembled, and forwardly extending wings 18 by means of which the chair back is connected to the standard 12 and to the seat 10.

The seat and back assembly is mounted for forward and rearward movement on horizontal ways or races secured to the standards 12. An upper race 19 and a lower race 20 are secured to lugs 21 on each standard by means of bolts 22 having nuts 23 on the lower ends thereof. Channel bars 24 are forwardly-rearwardly slidably mounted on the races 19 and 20, said channel bars being outwardly opening and having upper flanges 25 constituting races which are above and complementary to the upper races 19 on the standards 12, and lower flanges 26 constituting races which are below and complementary to the lower races 20 on the standards 12. A pair of anti-friction elements here shown as ball bearings 27 is interposed between each complementary pair of races 19, 25 and 20, 26, and a spacer bar 28 having spaced apertures 29 therethrough of slightly lesser diameter than the ball bearings 27 is provided for confining each pair of ball bearings 27 to a predetermined distance apart. The channel bars 24 are thus mounted for quiet forward and rearward movements on the standards 12.

Seat brackets 30 are turnably mounted on spindles 31 secured as by welding to the inner faces of the channel bars 24, and these brackets 30 have arms 32 which are secured as by means of rivets 33 to the seat foundation 13. (See Figures 5 and 6.) The seat 10 is thus mounted on the channel bars 24 turnably about a horizontal axis to a raised position for facilitating sweeping under the chair and to a lowered substantially horizontal position of occupancy, in which latter position the seat is supported by stops 34 on the channel bars 24 which stops engage the seat brackets 30.

The channel bars 24 are provided with upwardly extending tongues 35 here shown as integrally formed with the channel bars. The forwardly extending wings 18 of the chair back are pivotally

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connected in their lower forward regions to these tongues 35 and it will be seen that the lower portion of the back 11 is thus movable forwardly and rearwardly with the seat 10. The back wings 18 are supported in their upper forward regions on the standards 12 and the supporting connections of the wings to the standards are of such construction that as the seat and back assembly is moved rearwardly from its position shown in Figure 3 to its position shown in Figure 7 the angular inclination of the back is varied to a near-vertical degree and the space to the rear of the chair required for retraction is thus reduced to a minimum. These supporting and guiding connections comprise guide members 36 having shank portions 37 threaded into bosses 38 on the standards and turnable therein about a common horizontal axis, and bearing portions 39 having rearwardly-upwardly slide bearings 40 therein. Glides 41 of rod-like formation have their forward ends secured as by welding 42 to outwardly turned flanges 43 on the back wings 18, and have their rearward ends provided with enlarged heads or stops 44. The glides 41 are rearwardly-upwardly oblique and are freely slidable in the slide bearings 40 of the guide members 36.

It will be seen that when the chair is retracted by the occupant the seat moves rearwardly in a substantially horizontal path while the back simultaneously moves rearwardly and turns to a near-vertical position due to the shortening of the distance between pivot point A and pivot point B which effects rearward and upward movement of the glides 41 in the slide bearings 40 and simultaneous turning movement of the guide members 36.

Stops are provided for limiting the movements of the various parts of the chair to their forward positions or their positions of retraction. As here shown these stops comprise the heads 44 on the glides 41 which contact guide members 36 to limit forward movement of the chair, and the flanges 43 which contact the guide members 36 to limit retracting movement of the chair. The flanges 43 on the back wings 18 serve a further purpose by concealing certain of the operating parts of the chair from view and by shielding the chair occupant's clothing from said operating parts.

Only one specific embodiment of the invention has been herein illustrated and described, but it will be understood that the construction selected for illustration may be modified and details altered or omitted all within the scope and spirit of the following claims.

I claim:

1. In a chair, a frame, a seat and back assembly wherein the seat and back are pivotally connected for relative movement, means for mounting the seat on the frame for substantially horizontal forward and rearward movements, guide members mounted on opposite sides of the frame turnably about a horizontal axis and having slide bearings therein, and glides secured to the seat and back assembly in fixed relation to the back and in oblique disposition, said glides being slidable in and turnable with the guide members for effecting turning movement of the back relative to the seat during forward and rearward movements of the seat and back assembly.

2. In a chair, a frame, a seat and back assembly wherein the seat and back are pivotally connected for relative movement, means for mounting the seat on the frame for substantially horizontal forward and rearward movements, guide

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members mounted on opposite sides of the frame rearwardly of the seat mounting means, said guide members being turnable about a horizontal axis and having slide bearings therein, and glides secured to the seat and back assembly in fixed relation to the back and in oblique disposition, said glides being slidable in and turnable with the guide members for effecting turning movement of the back relative to the seat during forward and rearward movements of the seat and back assembly.

3. In a chair, a frame, a seat and back assembly wherein the seat and back are pivotally connected for relative movement, means for mounting the seat on the frame for substantially horizontal forward and rearward movements, guide members mounted on opposite sides of the frame above and rearwardly of the seat mounting means, said guide members being turnable about a horizontal axis and having rearwardly-upwardly extending slide bearings therein, rearwardly-upwardly extending glides secured to the seat and back assembly in fixed relation to the back, said glides being slidable in and turnable with the guide members for effecting turning movement of the back relative to the seat during forward and rearward movements of the seat and back assembly.

4. In a chair, a frame, inwardly extending substantially horizontal upper and lower races at each of the opposite sides of the frame, outwardly opening channel bars having races in their flanges disposed above and below the respective upper and lower races on the frame and in complement thereto, anti-friction elements between the pairs of complementary races facilitating forward and rearward sliding movements of the channel bars relative to the frame, a seat mounted on said channel bars and movable forwardly and rearwardly therewith, a back having forwardly extending wings pivotally connected in their upper forward regions to the opposite sides of the frame and pivotally connected in their lower forward regions to the channel bars, and means for limiting the forward and rearward movements of said channel bars.

5. In a chair, a frame, inwardly extending substantially horizontal upper and lower races at each of the opposite sides of the frame, outwardly opening channel bars having races in their flanges disposed above and below the respective upper and lower races on the frame and in complement thereto, anti-friction elements between the pairs of complementary races facilitating forward and rearward sliding movements of the channel bars relative to the frame, a seat mounted on said channel bars and movable forwardly and rearwardly therewith, upwardly extending tongues on said channel bars, a back having forwardly extending wings pivotally connected in their upper forward regions to the opposite sides of the frame and pivotally connected in their lower forward regions to said tongues, and means for limiting the forward and rearward movements of said channel bars.

6. In a chair, spaced upright chair-supporting standards, a seat mounted at its opposite sides on said standards for forward and rearward movements relative to the standards, a back having at its opposite sides forwardly extending wings pivotally connected in their lower forward regions to the seat for forward and rearward movements therewith, guide members mounted on the upper portions of the standards, and glides secured to the back wings obliquely movable on the guide

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members for effecting turning movement of the back relative to the seat during forward and rearward movements of the seat, said back wings having outwardly extending flanges thereon shielding the guides and the glides from an occupant of the chair.

7. In a chair, spaced upright chair-supporting standards, a seat mounted at its opposite sides on said standards for forward and rearward movements relative to the standards, a back having at its opposite sides forwardly extending wings pivotally connected in their lower forward regions to the seat for forward and rearward movements therewith, guide members mounted on the upper portions of the standards, and glides secured to the back wings obliquely movable on the guide members for effecting turning movement of the back relative to the seat during forward and rearward movements of the seat, said back wings having outwardly extending flanges thereon shielding the guides, the glides, and the pivotal

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connections between the back wings and the seat from an occupant of the chair.

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