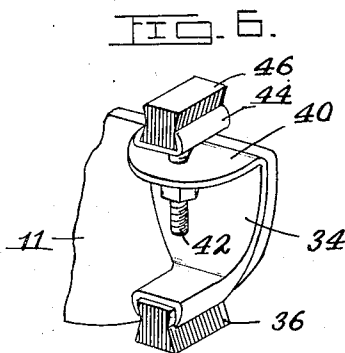


J. M. DORTON
ADJUSTABLE CHAIR
Filed Nov. 9, 1935

3 Sheets-Sheet 1



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April 27, 1937.

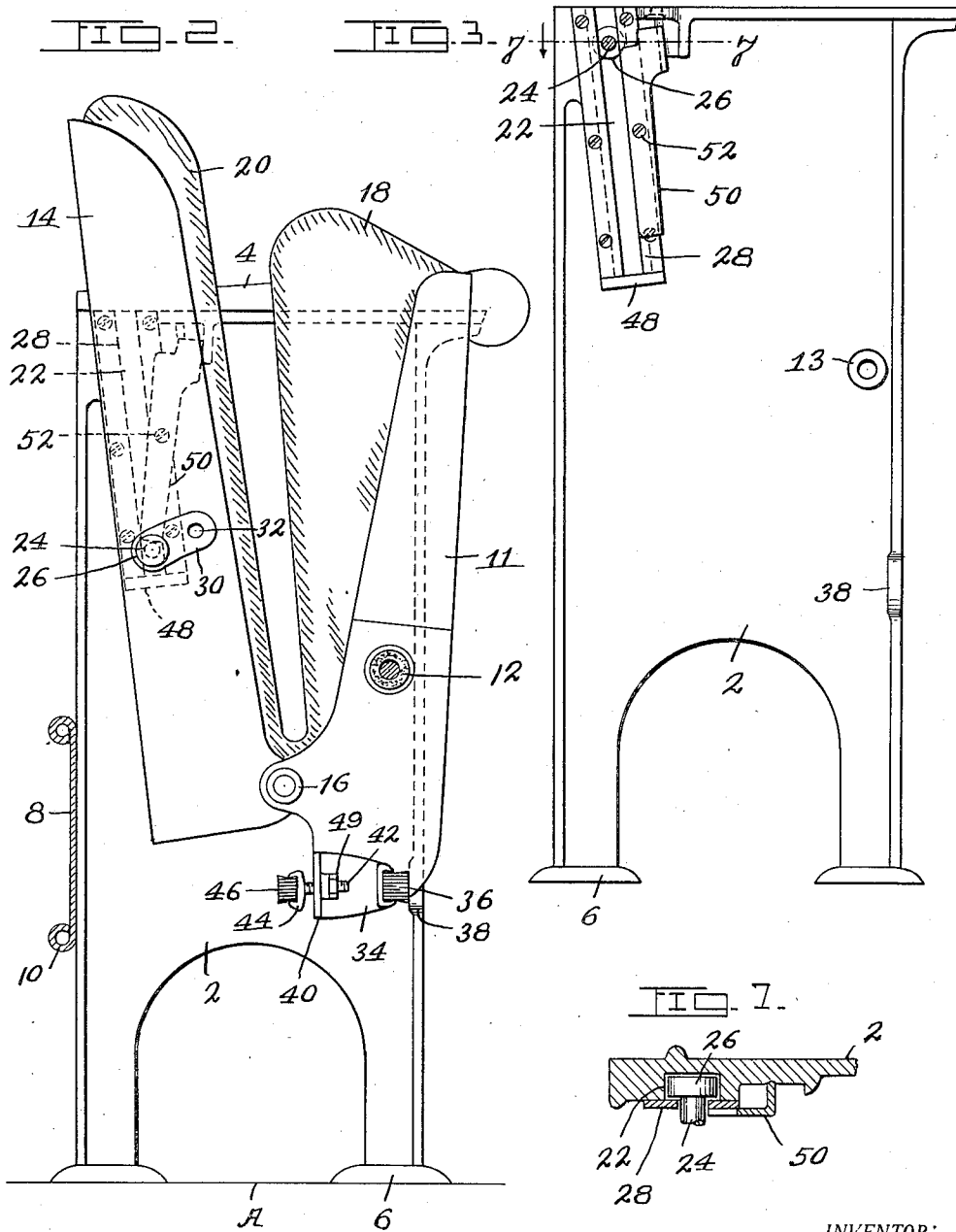
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FIG. 4.

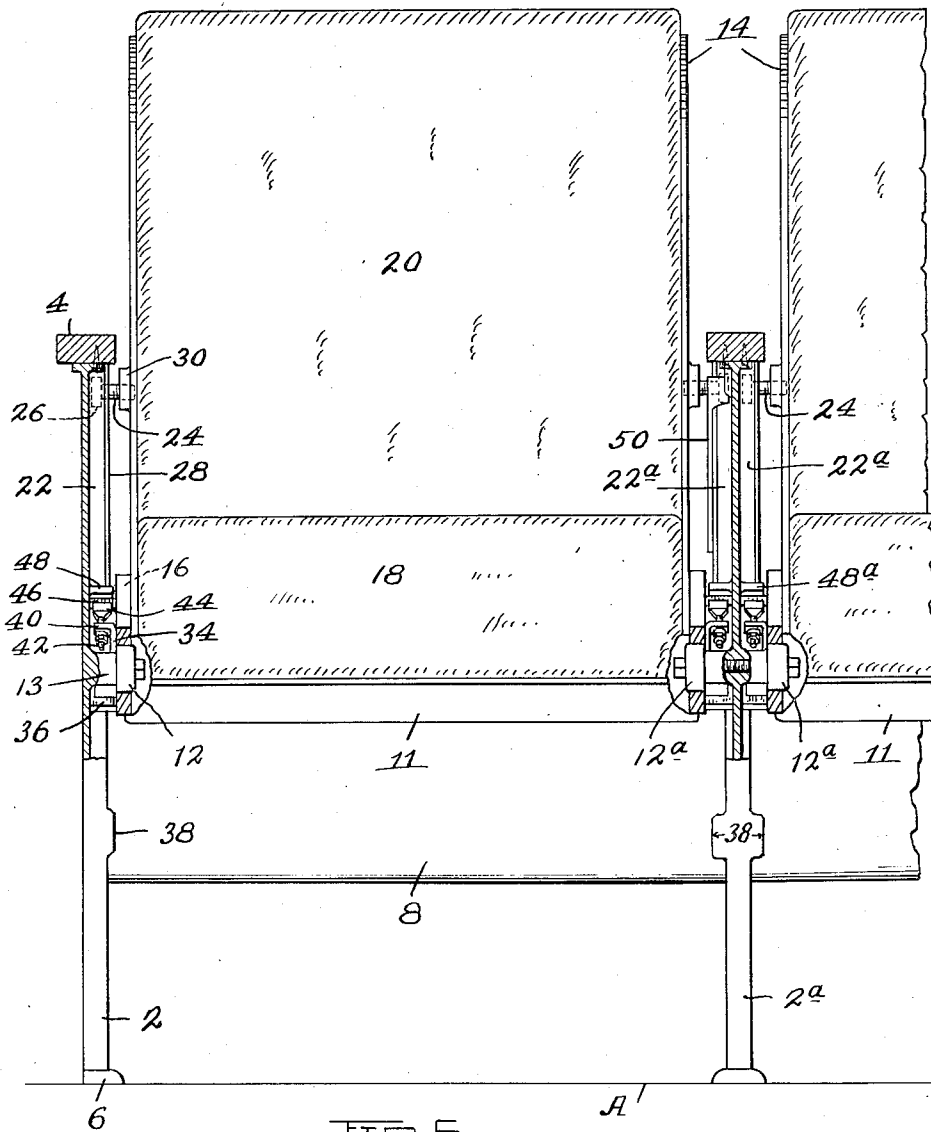
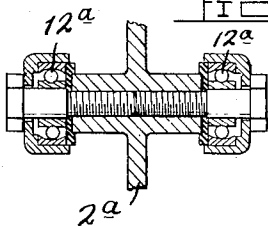


Fig. 5.



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ADJUSTABLE CHAIR

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Application November 9, 1935, Serial No. 49,074

5 Claims. (Cl. 155—85)

My invention relates to adjustable chairs which may be employed to advantage in schools, theaters and other public institutions, and when modified slightly may also be used to advantage in automobiles and other places where a chair of this character is desired.

An important feature of the invention resides in the chair-seat which is adapted to automatically fold up when relieved of the weight of an occupant so that when the chairs are arranged in rows, as in public buildings, the seats will be out of the way of persons passing to and from the chairs.

Additional features reside in independent means for adjusting the seat and back of the chair to different inclinations to suit the convenience of the user.

A further feature resides in means whereby the seat may be either locked in lowered position for use, or locked in folded position when unoccupied.

In order that the invention may be fully understood, reference will now be had to the accompanying drawings, in which:

Fig. 1 is a side elevation of the chair with the frame thereof in vertical section and the seat in lowered position ready for use.

Fig. 2 is a similar view to Fig. 1, excepting that the seat is folded up out of the way.

Fig. 3 is a side elevation of one of the standards comprising the frame of the chair.

Fig. 4 is a broken front elevation showing one chair and part of another, with the frames in vertical section on line 4—4 of Fig. 1.

Fig. 5 is a fragmentary sectional view of one of the standards provided with a duplex anti-friction bearing upon which adjacent sides of two seats are mounted.

Fig. 6 is a detail perspective of one of a pair of devices for limiting the upward and downward movements of the chair seat.

Fig. 7 is an enlarged section of a part of one of the standards on line 7—7 of Fig. 3.

In carrying out the invention I provide a suitable frame consisting of a pair of standards 2 provided at their upper ends with arms 4 and at their lower ends with feet 6 which may be secured to the floor A by screws or other suitable means, not shown. The standards 2 are secured in spaced relation to each other by means of a horizontal member 8 firmly secured to the rear portions of the standards 2 and consisting preferably of sheet metal reinforced at its upper and lower margins with longitudinal beads 10.

The chair has a seat 11 consisting preferably of sheet metal and mounted a suitable distance in advance of its rear end upon antifriction bearings 12 carried by bosses 13 on the respective standards 2.

The chair also has a back 14 which is preferably made from the same kind of material as the seat 11 to which its lower portion is operably connected by pivots 16 disposed at a point between the bearings 12 and the rear end of the seat 11, as shown by Fig. 1. When desired the seat 11 and the back 14 may be provided with cushions 18 and 20, respectively, for convenience of the persons who use the chair.

In addition to the back 14 being operably connected to the seat 11 by the pivots 16, said back is also operably connected to the standards 2 by means of grooved guides 22 and elements 24, which latter operate in the grooves of the former. The guides 22 are preferably formed integral with the standards 2 and the elements 24 are provided at their outer ends with enlarged heads 26 adapted to slide up or down in the respective guides 22 where they are retained by flanges 28 secured to said guides at opposite sides of the grooves. The reduced inner portions of the elements 24 are threaded into segments 30 fixed to opposite sides of the back 14 and provided near each end with threaded holes 32, which arrangement permits the back 14 to be adjusted backwardly or forwardly to suit the convenience of the user and be secured in either position by screwing the respective elements 24 into the rear or forward holes 32.

34 designates stops fixed to opposite sides of the rear portion of the seat 11 to limit the upward and downward movements thereof. Each stop 34 is provided with a lower outturned end with a rubber or other suitable cushion 36 adapted to limit the upward movement of the seat 11 by impinging against an abutment 38 formed on the lower forward portion of each standard 2. The upper portion of each stop 34 has an outturned end 40 with a screw 42 threaded therein and provided at its upper end with an enlargement 44 in which a cushion 46 is firmly held. Downward movement of the seat 11 is checked by the cushions 46 impinging against abutments 48 formed on the respective standards 2 and the lower ends of the guides 22. The inclination of the seat 11 may be varied by adjusting the screws 42 inwardly or outwardly. Lock nuts 49 are provided for holding the screws 42 from accidental rotation.

In some instances it may be desirable to secure

the seat 11 either in the lowered position shown by Fig. 1, or in the raised, or folded, position shown by Fig. 2, so I provide one of the standards 2 with a lock 50 mounted intermediate its ends upon a pivot 52 projecting from the adjacent guide 22. When it is desired to lock the seat 11 in lowered position the lock 50 is adjusted to the position shown by Fig. 1 so that its upper end will engage under the adjacent element 24 and thus prevent it from moving downwardly in the respective guide 22, and when it is desired to lock the seat 11 in raised or folded position the lock 50 is adjusted to the position shown by Fig. 2 so that its lower end will engage the element 24 and thus prevent it from moving upwardly in the guide 22.

By mounting the seat 11 upon the antifriction bearings 12 it is evident that the upward or downward movement thereof will be attended with very little friction, and by locating the bearings 12 some distance in advance of the rear end of the seat 11 and the pivots 16 it is apparent that the weight of the back 14 and that portion of the seat projecting rearwardly of the bearings 12 will overbalance the forward portion of said seat and thus automatically fold the same to the position shown by Fig. 2 when the seat is unoccupied and the lock 50 is in neutral position as shown by Fig. 3.

When one chair is to be used alone the standards 2 are preferably made in duplicate, with the exception that one will be made for the right hand side and the other for the left hand side of the chair, but when a number of chairs are to be arranged in a row each intermediate standard 2a is provided at its opposite sides with guide members 22a, a pair of abutments 38a, a pair of abutments 48a, and a duplicate set of antifriction bearings 12a, Fig. 4.

From the foregoing description, taken in connection with the drawings, it is evident that I have provided a chair possessing the advantages above pointed out, and while I have shown and described one form of said chair I reserve all rights to such other forms and modifications thereof as properly fall within the spirit and scope of the invention as claimed.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. A chair of the character described comprising a frame having aligned bosses projecting laterally therefrom, members threaded in said bosses, antifrictional bearings carried by said threaded members, a seat mounted on said bear-

ings and adapted to fold when not in use, and a back slidably connected to the frame and pivotally connected to the seat to cooperate with the latter in automatically effecting the folding operation.

2. A chair of the character described comprising a frame, a seat foldably connected to said frame, a movable back operably connected to said seat and adapted to cooperate therewith in effecting the folding operation when the seat is unoccupied, grooved guide means on the frame, elements operating in said grooved guide means, and means on the back adapted to be engaged at different points by said elements whereby the back may be adjusted at different angles to the seat.

3. A chair of the character described comprising a frame, a seat foldably connected to said frame, a movable back operably connected to said seat and adapted to cooperate therewith in effecting the folding operation when the seat is unoccupied, guide means on opposite sides of the frame, elements on opposite sides of the back operably engaging said guide means to direct the movements of the back, and means on the frame adapted to engage said elements and thereby lock the back from movement.

4. A chair of the character described comprising a frame, a seat foldably connected to said frame, a movable back operably connected to said seat and adapted to cooperate therewith in effecting the folding operation when the seat is unoccupied, guide means on opposite sides of the frame, elements on opposite sides of the back operably engaging said guide means to direct the movements of the back, and lock means pivotally mounted on the frame and adapted to be swung in one direction to engage said elements and thereby lock the back when the seat is folded, or be swung in a reverse direction to engage said elements and thereby lock the back when the seat is in position for use.

5. In a chair of the character described, a frame, a seat mounted on said frame to swing upward and downward, members fixed to opposite sides of said seat and each having upper and lower outturned ends, cushioning means on each lower outturned end adapted to abut the frame and thereby limit the upward swing of the seat, and cushioning means adjustably connected to each upper outturned end adapted to contact the frame and thereby limit the downward swing of the seat.

JOHN M. DORTON.