W. FRANKS.

SEATING.

APPLICATION FILED MAY 23, 1907.

947,493. Patented Jan. 25, 1910.

Fig. 1.

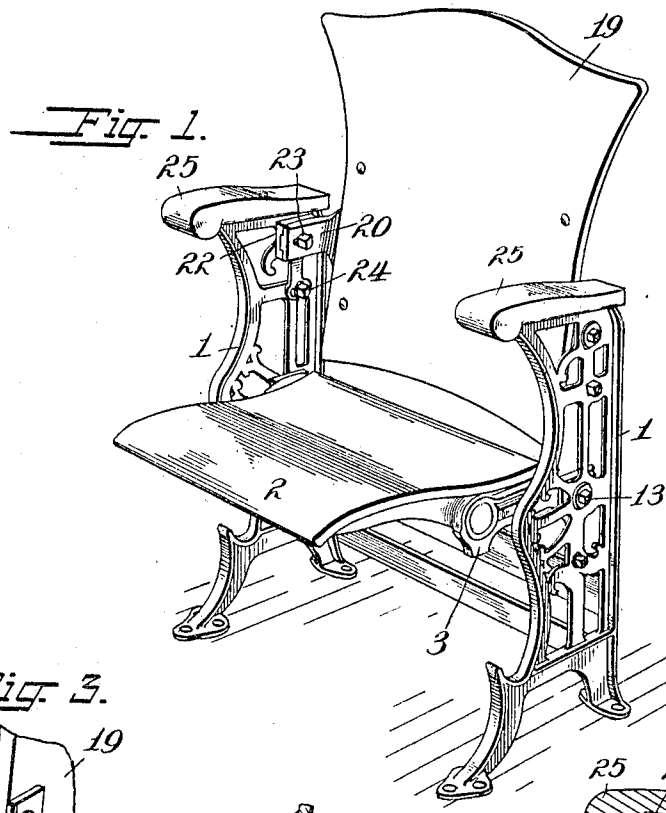


Fig. 3.

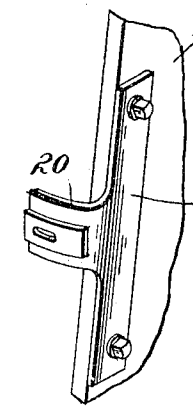


Fig. 2.

Fig. 7.

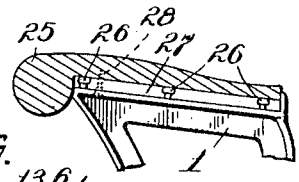


Fig. 6.

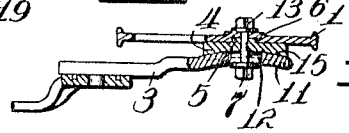


Fig. 8.

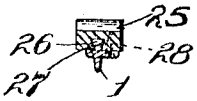


Fig. 4.

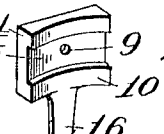
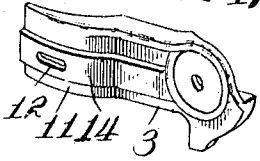


Fig. 5.



Witnesses

Milton Lenoir

George L. Chindahl

Inventor

By William Franks

Luther L. Miller

Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM FRANKS, OF MUSKEGON, MICHIGAN, ASSIGNOR TO SUPERIOR MANUFACTURING COMPANY, OF MUSKEGON, MICHIGAN, A CORPORATION OF ILLINOIS.

SEATING.

947,493. Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed May 23, 1907. Serial No. 375,190.

To all whom it may concern:

Be it known that I, WILLIAM FRANKS, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Seating, of which the following is a specification.

When arranging opera chairs and other seats in curved rows in an auditorium, it is desired that the side frames of the seats be disposed in vertical planes converging toward the center of the circle on which the seats are arranged.

One of the objects of this invention is the provision of means for making the side frames adjustable with reference to the seat and the back so that said side frames may be properly positioned with reference to the curvature of a row of seats.

Another object of the invention is the provision of means for maintaining a proper horizontal position of the seat and the back when the chair is placed upon an inclined floor.

A further object is to provide means for adjusting the height of the seat and the degree of inclination of the back.

The invention also relates to other improvements in seating hereinafter set forth.

In the accompanying drawings, Figure 1 is a perspective view of an opera chair embodying the features of my invention. Fig. 2 is a transverse vertical section through the chair. Fig. 3 is a perspective view illustrating the means for connecting the back and the side frames. Figs. 4 and 5 are perspective views of the members for adjustably connecting the seat and the side frames. Fig. 6 is a sectional detail view of the last mentioned devices. Figs. 7 and 8 are detail views illustrating the means for connecting the arm rests to the side frames.

The side frames 1 may be of any suitable construction. Between them is adjustably supported the seat 2, said seat being carried upon two arms 3 each adjustably connected to one of the side frames 1 by the means to be next described. A block 4 is pivotally secured to the inner side of each of the side frames 1, said block having a hub 5 adapted to lie within a recess 6 in the inner face of the side member, a bolt 7 extending through an opening 8 in the side frame and an axial opening 9 in said hub. The block 4 has a vertical face 10 which is curved on the arc of a circle generated in a horizontal plane. The arm 3 has a curved portion 11 conforming to the face 10, and in said curved portion is an elongated opening 12 through which the bolt 7 extends. A nut 13 on said bolt holds the block 4 and the arm 3 in position with reference to each other. To take the weight of the load off of the bolt 7, the block 4 and the arm 3 are preferably inter-engaged so as to prevent pivotal movement between said parts, as by means of a rib 14 formed upon the curved portion 11 of the arm and fitting within a groove 15 in the face 10 of the block 4. The means for adjustably securing the block 4 against pivotal movement with reference to its side frame consists, in this instance, of an arm 16 fixed to said block, said arm having in its lower portion a plurality of openings 17 adapted to receive a bolt 18. Any common or preferred means may be used for connecting the seat 2 to the outer ends of the arms 3.

The back 19 is secured at opposite sides to the side frames 1 by means of arms 20 substantially like the arms 3. Each of the arms 20 has an attaching portion 21 by means of which the arm is secured to the rear side of the back. Each arm 20 is secured to a block 22 substantially similar to the block 4 by means of a bolt 23, said block being pivotally mounted upon said bolt and provided with a bolt 24 for adjustably locking it in position. The arm rests 25 are preferably of wood and each is secured to the upper end of one of the side frames 1 in any suitable way, as by forming buttons 26 upon said side frame adapted to lie within an under-cut groove 27 in the lower side of the arm rest. A screw 28 extending through a flange upon the side frame into the arm rest holds the latter against movement.

When a chair embodying the features of my invention is placed upon an inclined floor the horizontality of the seat 2 is maintained by pivotally moving the blocks 4 to the desired extent and locking said blocks in adjusted position by means of the bolts 18, said bolts being passed through the appropriate openings 17. The back 19 is tilted rearwardly to compensate for the forward inclination of the floor by a pivotal movement of the blocks 22.

The pivotal connection of the arms 3 with

the side members 1 also permits of a limited adjustment of the height of the seat 2 when the chair is mounted upon a level floor.

In arranging a number of seats in a curved row, the bolts 7 and 23 are slackened to permit of a partial rotation of the side members 1 with reference to the seat and the back. The side members are then arranged so that they converge toward the center of the circle on which the seats are placed. The bolts are then tightened up to secure the side members firmly in position with relation to the seat and the back. The chairs are then secured to the floor in the desired position.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and I therefore do not wish to be limited to the arrangement and construction shown.

In a number of the following claims I have used the term "chair part" to indicate either the seat proper or the back.

I claim as my invention:

1. In seating, the combination, with a chair part, of two side frames and members connecting said chair part with said side frames, the latter being rotatable with reference to said chair part in horizontal planes, and said connecting members being rotatable with reference to the side frames in vertical planes to vary the degree of inclination of said chair part, said chair part being supported solely by said side frames through the medium of said connecting members.

2. A chair-part connecting member consisting of a block having a face curved on the arc of a circle, said block being adapted to be pivotally supported, and an arm fixed to said block, the free end of said arm having a plurality of openings therein.

3. A chair-part connecting member consisting of a block having a face curved on the arc of a circle, the opposite side of said block having a hub and said block having a pivot opening therein, said opening extending through said hub, and an adjusting arm fixed to said block.

4. A chair-part connecting member consisting of a block having a grooved face which is curved on the arc of a circle, the opposite side of said block having a hub, and said block having a pivot opening therein, said opening extending through said hub, and an adjusting arm fixed to said block, the free end of said arm having a plurality of openings therein.

5. In seating, in combination, a supporting member; a chair part; an arm attached to said chair part; a block attached to said supporting member; an adjustable connection between said block and said supporting member; and an adjustable connection between said arm and said block.

6. In seating, in combination, a supporting member; a chair part; a block pivoted to said supporting member; an arm attached to said chair part and slidable on said block; and means for securing said block and said arm together.

7. In seating, in combination, a supporting member; a block pivoted to said supporting member, said block having an arm fixed thereto; means for adjustably securing said arm to said supporting member, said block having a curved, grooved face; a chair part; an arm attached to said chair part, said arm conforming to the curved face of said block; a rib on said last mentioned arm adapted to lie within the groove of said block; and means for securing said last mentioned arm to said block.

8. In seating, in combination, a block mounted for adjustable pivotal movement in a vertical plane, a chair part and an arm carried by said chair part and connected to said block for adjustable rotation in a horizontal plane.

9. In seating, in combination, a block mounted for pivotal movement in a vertical plane, a chair part, an arm carried by said chair part and connected to said block for rotation in a horizontal plane, means for holding said block at selected pivotal adjustments and means for holding said arm at selected positions along its line of rotation.

10. In seating, in combination, a block mounted for pivotal movement in a vertical plane, a chair part, an arm carried thereby and slidably connected to said block, for adjustment in a horizontal plane, said arm being movable in a vertical plane with said block, means for holding said block at selected pivotal adjustments and means for holding said arm at selected sliding adjustments.

11. In seating, in combination, a block mounted for pivotal movement in a vertical plane; a chair part; an arm carried thereby and connected to said block for adjustable rotation in a horizontal plane, said arm being movable in a vertical plane with said block; means for holding said block at selected pivotal adjustment; and means for holding said arm at selected adjustment along its line of horizontal rotation.

WILLIAM FRANKS.

Witnesses:
JOHN M. KEARNAN,
WILLIAM J. HOWE.