

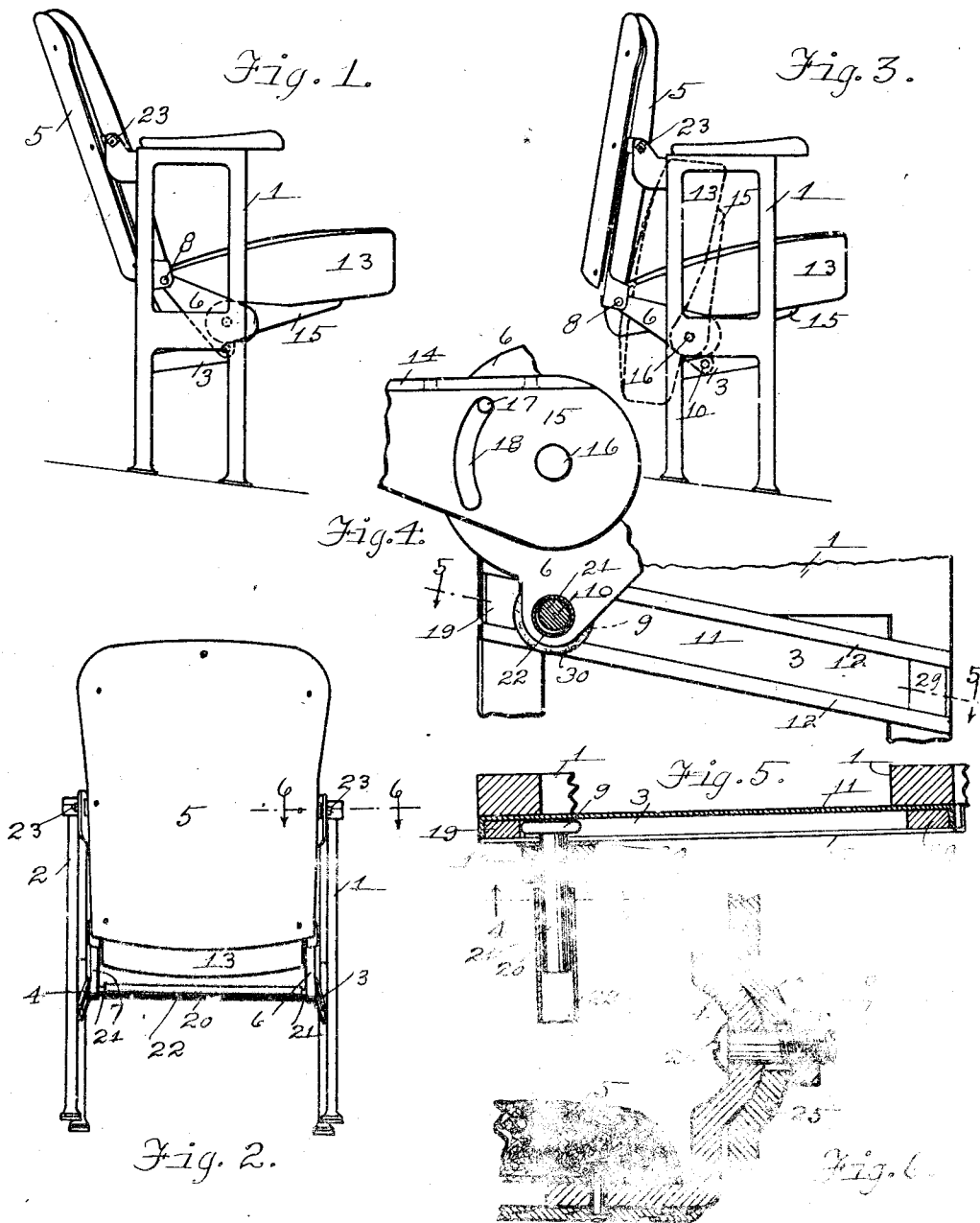
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W. M. HANSON

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THEATER CHAIR

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Witness:

J. L. Bradock,

Walter M. Hanson
BY

R. and P.

ATTORNEYS.

UNITED STATES PATENT OFFICE

WALTER M. HANSON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO AMERICAN SEATING COMPANY, OF GRAND RAPIDS, MICHIGAN, A CORPORATION OF NEW JERSEY

THEATER CHAIR

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The present invention relates to chairs, particularly such as are employed in auditoriums, moving-picture theaters and the like; and its object is, generally, to provide an improved chair of that character whose seat and back may be easily moved relatively to each other to a position of use and therefrom to a position wherein greater space for access to the chair is attained; and more particularly, to provide in such a chair a swingably mounted back, link members pivoted thereto and movable along forwardly and rearwardly extending ways on which members the seat is mounted turnably to and from its position of use; and further to provide such ways inclined downwardly-rearwardly and upwardly-forwardly; and further, to provide a chair having such links provided with rolls travelling in the ways; and further, to provide axial connections between such rolls; and further, to provide such axial connections longitudinally extensible and contractible; and further, to provide an improved universal joint for mounting the back of the chair.

These and any other and more specific objects hereinafter appearing are attained by, and the invention finds preferable embodiment in, the structure hereinafter particularly described in the body of this specification and illustrated by the accompanying drawing, in which:

Figure 1 is a right-hand side elevational view of a theater chair showing its parts in the position of use;

Figure 2 is a rear view thereof;

Figure 3 is a view similar to Figure 1 but showing the seat in retracted position in solid lines and in upwardly-turned position in dotted lines;

Figure 4 is a detail fragmentary view (enlarged) of the inner side of the right-hand upright side frame of the chair and connected parts, certain parts being shown in vertical section taken on line 4—4 of Figure 5;

Figure 5 is a sectional view of the same taken on line 5—5 of Figure 4; and

Figure 6 is a detail fragmentary sectional view (enlarged) of a universal joint whereby the back of the chair is mounted on the

side frames, taken on line 6—6 of Figure 2.

In the embodiment of the invention illustrated by the drawing, the theater chair comprises the following relatively movable parts: a pair of upright side frames 1, 2 having on their inner sides the ways 3, 4 respectively, extending forwardly-upwardly and rearwardly-downwardly (as particularly well seen in Figure 4); a back 5 mounted on and between the side frames swingably about a horizontal axis approximately midway of its vertical length; a pair of link members 6, 7 connected at their rear ends to the lower end of the back pivotally about a horizontal axis 8, these link members having at their front ends rolls 9 mounted at 10 thereon turnably about a horizontal axis and rolling along the ways respectively in which they are held by the side walls 11 and the vertical side flanges 12 of the ways; and a seat 13 fastened to the flanges 14 of a pair of supporting arms 15 mounted on the link members at 16 turnably about a horizontal axis to raised position (shown in dotted lines in Figure 3), this seat and its arms being held in the horizontal position of use shown in Figure 1 and indicated in Figure 4 by stop lugs or pins 17 carried by the link members and moving in the curved slots 18 of the arms 15.

It will be seen that in pushing the seat rearwardly to the retracted position shown in solid lines in Figure 3, the forward ends of the link members move rearwardly and downwardly, the rolls 9 travelling along the ways until limited by the preferably cushioning stop 29, these link members in said movement swinging the lower end of the back 5 rearwardly, and it will be seen that in such bodily movement the link members have also a turning movement about the axes 8 and 10.

The rearwardly-downwardly inclination of the ways 3, 4 is an important feature, for thereby the following action of the parts and desirable results thereof are attained: Inasmuch as the rearward movement of the seat is downwardly, it is more easily pushed rearwardly by an occupant seated in the chair; and in thus pushing the seat rearwardly with his feet resting on the floor, the pressure

of the seat on the occupant's thighs adjacent his knees is not increased although in such movement of the seat his legs straighten; and furthermore, by reason of the rearwardly-downward inclination of the ways, the rear part of the seat in its rearward movement is carried downwardly relatively to the bottom of the back 5 but not so far downwardly as is the front part of the seat, whereby additional space between the seat and the back at their adjacent portions is provided, so that the occupant is not pressed between the seat and the back in the seat's rearward movement.

The seat's arms 15 being pivoted at 16 on the link members 6, 7 near their forward ends, the seat may be turned from its horizontal position shown in solid lines in Figure 3 to the parallel and contacting position with the back shown in dotted lines in this view, this construction thus providing a peculiarly compact or space-economizing arrangement of the parts allowing ready access to the chair, and also, by swinging the back to a more nearly perpendicular position, economizing space behind the chair.

To more firmly support the seat and prevent binding of the rolls on the sides of the ways in their travel therealong, said rolls in the opposite ways are connected by a horizontal shaft member designated generally 20, and inasmuch as the ways may be relatively inclined horizontally (for the purpose of arranging a plurality of chairs side by side in a curved row), such shaft member desirably comprises aligned telescoping portions 21, 22 relatively movable axially.

It will be seen in Figure 4, that the axis 16 on which the seat's supporting arms 15 turn and the axis 10 of the rolls 9 at either side of the chair are in vertical alignment in the forward position of the link members and the usable position of the seat. The back 5 is pivotally mounted on each of the side frames by means of a universal joint designated generally 23, in order that the side frames may be disposed in non-parallel relation. As shown in Figure 6 this universal joint comprises a spherically-convexing part 24 carried by the back and a concave part 25 carried by the side frame in which part the part 24 turnably bears, a connecting threaded bolt 26 having a nut 27 extending through the middle portions of said parts and spacedly at 28 from one of them.

A cushioning stop 19 is desirably provided at the forward end as well as at the rear end of the ways. Washers 30 are desirably provided between the ways and the link members as shown in Figures 4 and 5.

The invention being intended to be pointed out in the claims, is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawing or hereinbefore described.

I claim:

1. A chair comprising: spaced upright side frames having on their inner sides ways extending forwardly and rearwardly; a back mounted on the frames swingably about a horizontal axis; link members connected at their rear ends pivotally about a horizontal axis to the back below the mounting thereof and having rolls turnably mounted on their front ends and rolling along the ways; a seat carried by the link members, the rolls of the opposite link members being connected by an axle comprising aligned portions relatively movable axially.

2. A chair comprising: spaced upright side frames having on their inner sides ways extending forwardly and rearwardly; a back mounted on the frames swingably about a horizontal axis; link members connected at their rear ends pivotally about a horizontal axis to the back below the mounting thereof and having rolls turnably mounted on their front ends and rolling along the ways; a seat carried by the link members, the rolls of the opposite link members being connected by an axle.

3. A chair comprising: spaced upright side frames having on their inner sides ways extending forwardly and rearwardly; a back mounted on the frames swingably about a horizontal axis; link members connected at their rear ends pivotally about a horizontal axis to the back below the mounting thereof, and having rolls turnably mounted on their front ends and rolling along the ways; a seat carried by the link members turnably about a horizontal axis to elevated position, the axes of the roll and of the turning movement of the seat at each side of the chair being in vertical alignment in the forward position of the link members in the ways.

4. A chair comprising: spaced upright side frames having on their inner sides ways extending forwardly and rearwardly; a back mounted on the frames swingably about a horizontal axis; link members connected at their rear ends pivotally about a horizontal axis to the back below the mounting thereof, and having rolls turnably mounted on their front ends and rolling along the ways; a seat carried by the link members.

5. A chair comprising: spaced upright side frames having on their inner sides ways extending forwardly-upwardly and rearwardly-downwardly; a back mounted on the frames swingably about a horizontal axis; link members connected at their rear ends pivotally about a horizontal axis to the back below the mounting thereof, and bearing at their front ends turnably about a horizontal axis and slidably along the ways; a seat carried by the link members.

6. A chair comprising: spaced upright side frames having on their inner sides ways extending forwardly and rearwardly; a back

5 mounted on the frames swingably about a horizontal axis; link members connected at their rear ends pivotally about a horizontal axis to the back below the mounting thereof, and bearing at their front ends turnably about a horizontal axis and slidably along the ways; a seat carried by the link members turnably about a horizontal axis to elevated position.

10 In testimony whereof I have hereunto set my hand at Grand Rapids, Michigan, this 17th day of February, 1930.

WALTER M. HANSON.

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