Sept. 18, 1934. J. H. ADAMSON 1,974,035

AUDIENCE SEAT

Filed Dec. 14, 1932 4 Sheets-Sheet 1

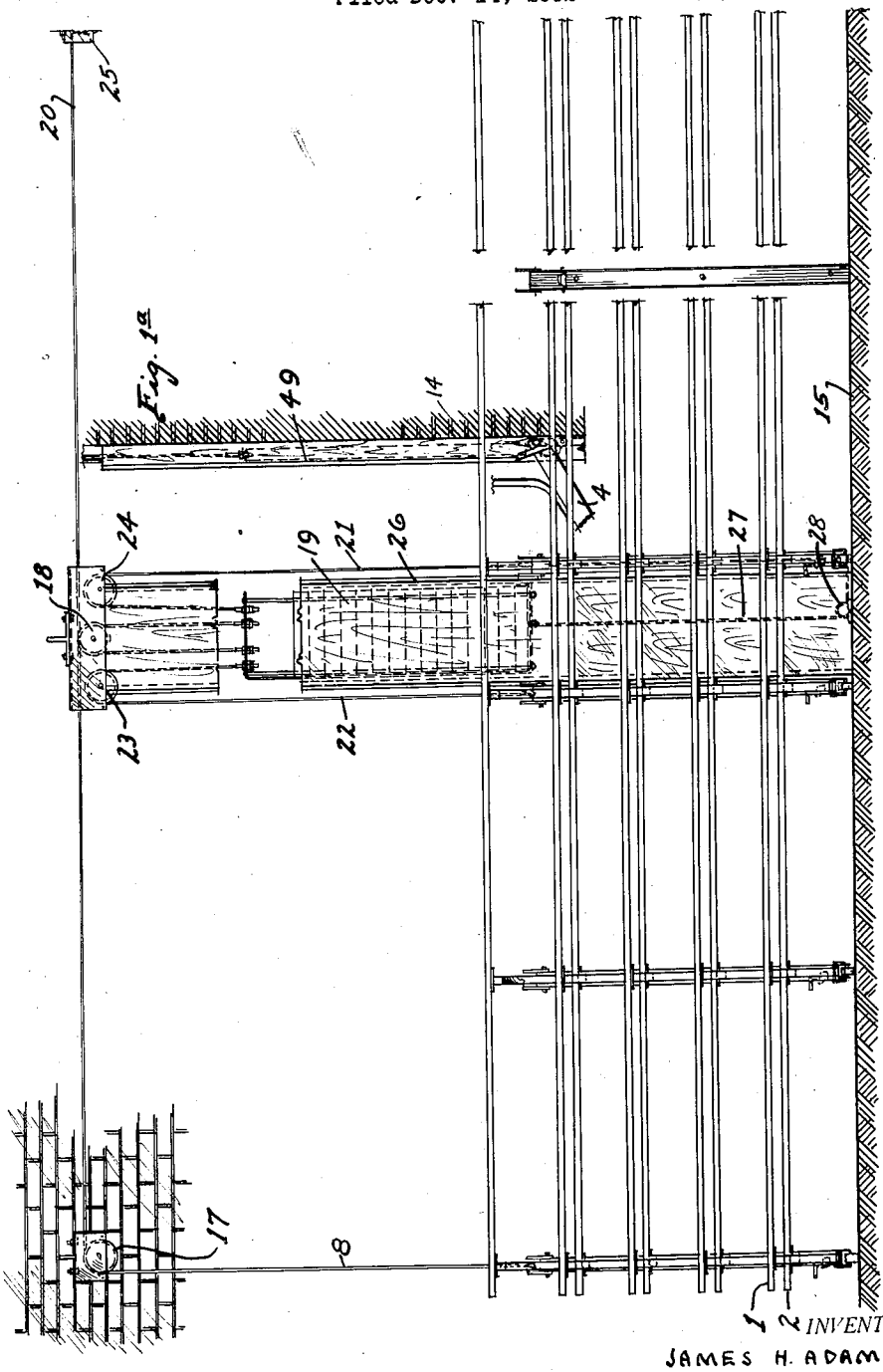


Fig. 1.

INVENTOR:
JAMES H. ADAMSON

BY

ATTORNEY.

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AUDIENCE SEAT

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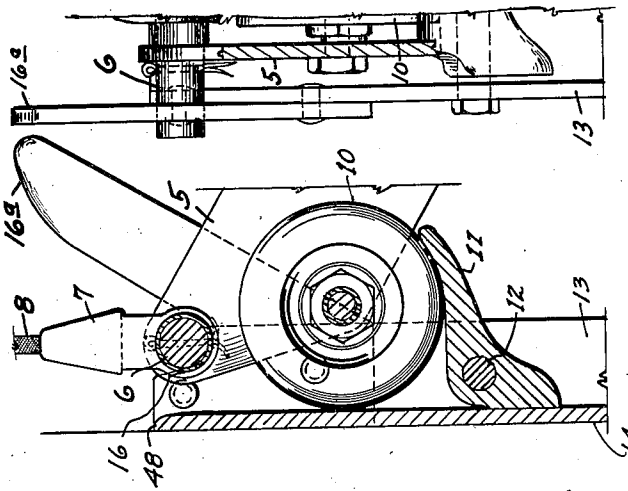


Fig. 5

Fig. 4.

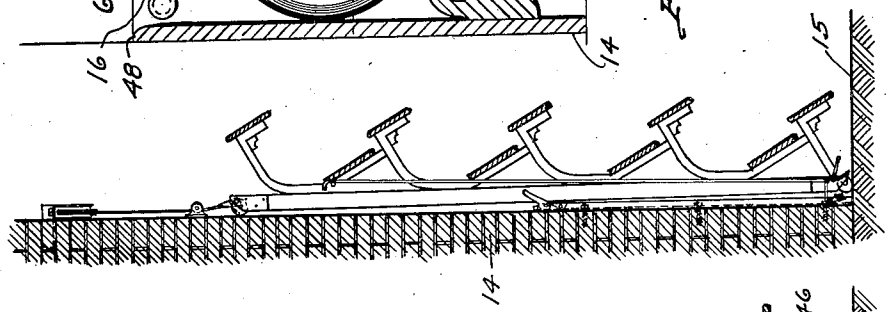


Fig. 3.

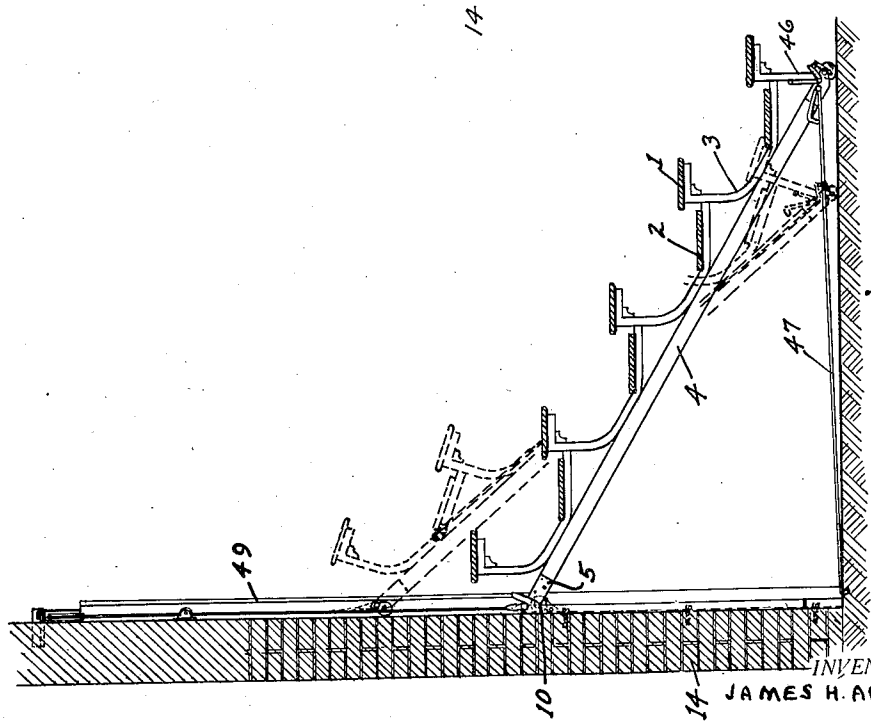


Fig. 2.

INVENTOR:
JAMES H. ADAMSON

BY

ATTORNEY.

Sept. 18, 1934. J. H. ADAMSON 1,974,035

AUDIENCE SEAT

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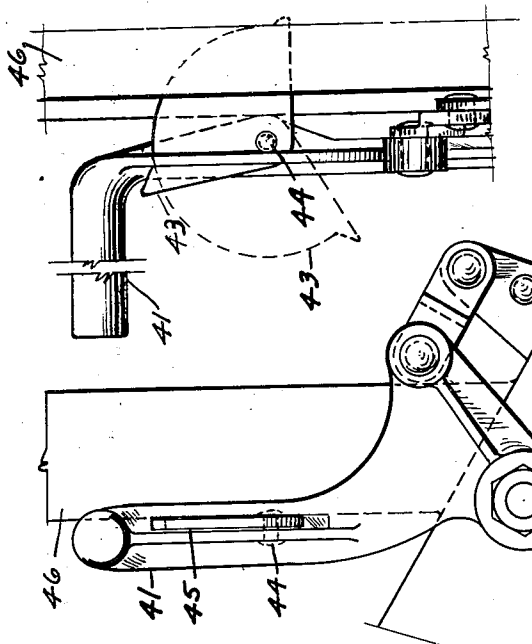


Fig. 8.

Fig. 7.

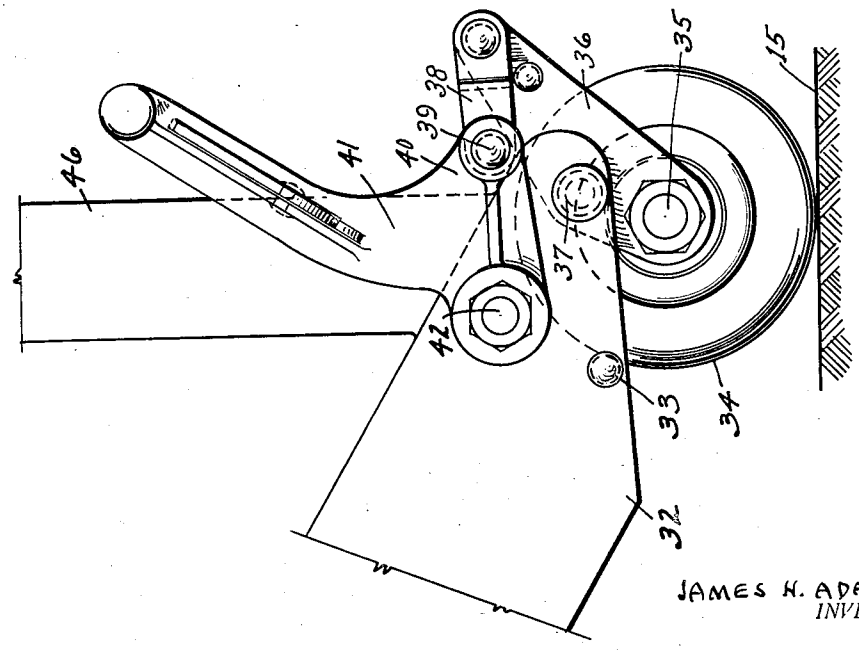


Fig. 6.

JAMES H. ADAMSON
INVENTOR.

BY Pamlevelock

ATTORNEY.

Sept. 18, 1934. J. H. ADAMSON 1,974,035

AUDIENCE SEAT

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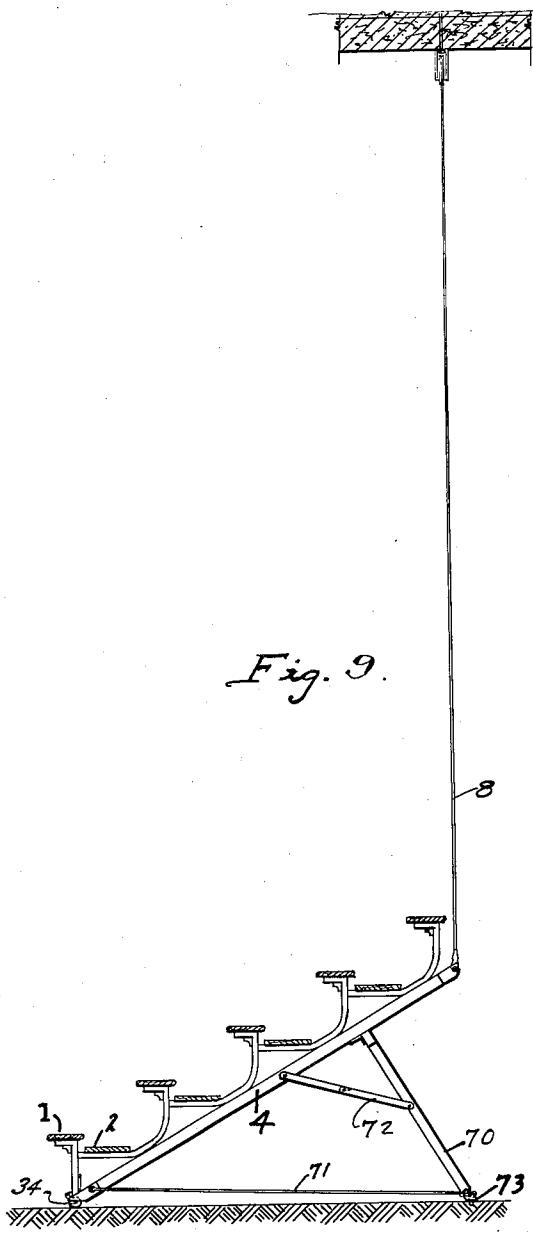


Fig. 9.

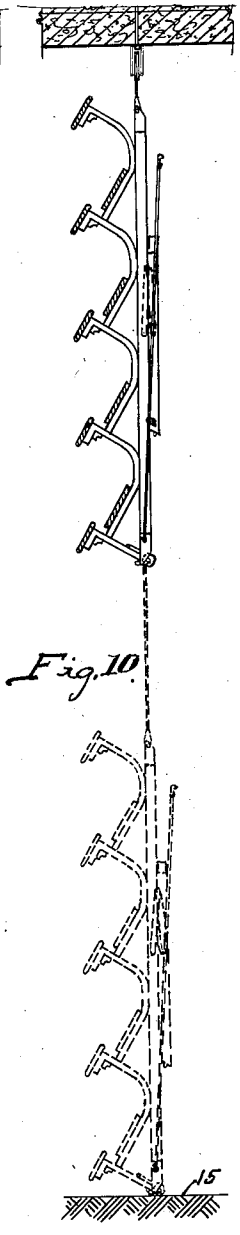


Fig. 10.

JAMES H. ADAMSON
INVENTOR.

BY

ATTORNEY.

Patented Sept. 18, 1934 1,974,035

UNITED STATES PATENT OFFICE

1,974,035

AUDIENCE SEAT

James H. Adamson, Larchmont, N. Y.

Application December 14, 1932, Serial No. 647,155

3 Claims. (Cl. 20—.5)

This invention relates to movable audience seats and particularly one adapted for use in gymnasia or other fully or partially enclosed spaces.

It is the object of the present invention to provide an audience seat of the bleacher type which can be readily moved out of the way against a wall without the necessity of providing guides on the wall, which is light and yet sturdy in construction, and which can be readily opened and locked against displacement. These and other features of the invention will more readily appear from the following detailed description of a preferred embodiment thereof and the appended claims.

In the drawings, Fig. 1 is a front elevation of audience seat sections constructed in accordance with the present invention;

Fig. 1*a* is a side elevation of the weight cage;

Figs. 2 and 3 are side elevations in open and closed positions of the audience seat, respectively;

Fig. 4 is a side elevation of the mounting structure for the seats;

Fig. 5 is a front elevation of a portion of the mounting structure shown in Fig. 4;

Figs. 6 and 7 are side elevations in locked and unlocked positions, respectively, of the caster mechanism on which the audience seat structure rests;

Fig. 8 is a front view of said caster mechanism.

Figs. 9 and 10 are side elevations showing in open and closed position, respectively, a modified form of bleacher.

Referring now to the drawings, 1 and 2 are wooden seats and footrests, respectively. There are as many seats as is required, and they are fastened to substantially C-shaped steel tubes 3, which in turn are riveted or welded to steel tubes or stringers 4. The stringers 4 are provided in pairs and the number of stringer pairs is dependent on the length and seating capacity of the structure. The upper side of each pair of stringers 4 terminate in a pair of brackets like 5. A spindle 6 is mounted between the two brackets and carries a yoke 7, to which is fastened a rope 8. Within the brackets 5 there is rotatably mounted a rubber caster 10. In the open position of the bleacher the caster rests on an arm 11 pivoted at 12 to a steel upright 13 fastened to the wall 14 and resting on the floor 15 of the building. The projecting ends of spindle 6 rest in a cradle 16 formed in the upper end of upright 13, the cradle having a projecting, slanting lip 16a.

The rope 8 is led over a pulley 17 fastened to the wall 14 through a second pulley 18 to balancing weights 19. Similarly, ropes 20, 21 and 22 fastened to other sets of stringers like 4, are led over pulleys 18, 24 and 23, respectively, and are connected to the weight 19. The weights 19 are held within a cage 26 and thus movement may be steadied by means of a rope 27 fastened to the bottom of the weights and leading to a take-up reel 28 held to the floor 15.

The lower ends of each pair of frame members or stringers 4 terminate in brackets 32. Mounted between each pair of brackets a brake bar 33 is mounted against which bears a caster 34 resting on the floor 15. The caster is rotatable around a shaft 35 carried in one end of a substantially triangular bracket 36. The bracket 36 is pivotally mounted at 37 near its apex to the bracket 32 and carries a link 38 at its third corner. The other end of link 38 is pivotally mounted at 39 to one leg 40 of an L-shaped actuating member 41 which may be rocked around a pivot 42 in the bracket 32. As shown in Fig. 6, by depressing leg 40 the caster 34 is forced against the brake bar 33 and thus prevented from rotating. By pressing back the member 41, the caster 34 is moved away from the brake bar 33 and freed to roll on the floor 15. In this position the pivot 39 is past dead center, insuring thus that the caster will be maintained in its freely rolling position. To keep the member 41 in its unlocked position, a disc 43 is pivoted at 44 within a slot 45 therein. As indicated in Fig. 8, the disc 43 may be rotated out of the slot 45 to engage the upright 46 on which the lowest seat of the bleacher is mounted.

In the open position of the seat (Fig. 2), a bar 47 may be locked between the floor 15, as seen in Figs. 2 and 3 and the bracket 32 to insure stability. When this bar 47 and other similar bars that may be placed are removed and all the casters 34 unlocked by pressing the lever 41 backwards (into the position shown in Fig. 7), the frame pieces 4 may be grasped near the bracket 5 and moved upward until the seat assembly is in a position substantially parallel with the wall of the gymnasium. This can be readily done owing to the fact that the weights 18 nearly balance the weight of the structure. The rubber casters like 10 will first roll on the channel iron 13. The upper end of this channel iron is curved towards the wall as indicated at 48 so as readily to permit the casters to roll from the channel piece 13 into contact with the wall 14 or in the reverse direction. The attendant continues to move, or rather to guide, the seat structure

until it assumes the position shown in Fig. 3. The stringers 4 in their movement towards the wall will swing the pivoted arm 11 upward into the position shown in Fig. 3. The seat assembly now rests on its casters parallel with the wall 14 and leaves the floor unobstructed except for the height of the seats. It should be noted also that neither in the open nor closed position of the seat is there any substantial strain placed on the wall 14, since substantially all the weight of the seat is on the floor 15. In the closed position the seat rests on its casters 34 alone, which in turn rest on the floor. In the open position when the seats are filled, this weight is distributed over a larger area of the floor, since the weight now rests on casters 34 resting on the floor, and on casters 10 and pin 6 which, through the agency of the channel iron 13, also rest on the floor 15. Owing to the absence of vertical guides that have heretofore been usually attached to the walls for guiding the bleacher assembly into its closed position, no appreciable strain is placed on the wall except at the points of attachment of the hoisting ropes, and the danger of the assembly binding or sticking in the guides is obviated. Besides, the walls of the gymnasium or auditorium are left practically unmarred, and the installation and removal of the seat assembly may be readily effected.

The slanting lip 16*a* at the upper end of the channel piece 13 serves to direct pin 6 into its seat 48 should the bleacher tend to move away from the wall 14 while it is being lowered. For the same purpose, each side of the weight cage 26 is provided with a bar 49 (Fig. 1*a*) which may be at an angle to the edge of the cage 26 as shown or parallel with the edge of the cage and aligned with the tip of lip 16, and with which contact the projecting ends of the pins 6 forming part of the two central stringer assemblies adjacent the weight cage should the bleacher swing too far from the wall.

Referring now to Figs. 9 and 10, we have seat and foot rest sections and stringers like in the previous embodiment of the invention. However, the upper ends of stringers like 4 are attached direct to the cable 8 and the whole bleacher is resting on the forward casters like 34 and on braces 70 hinged to the stringers 4 near the upper ends thereof. The braces 70 are held in their open positions by means of bars 71 pivoted to the lower ends of the stringers and hinge pieces 72. The brace 70 has a lug 73 projecting from it adapted to engage a corresponding opening in the floor 15. When the bleacher is not in use the hinge support of the bleacher is closed as shown in Fig. 10, and the whole assembly hoisted by means of cable 8 to a position near the ceiling.

What is claimed is:

1. In a movable audience seat for an enclosed space, a plurality of stringers, seat members and footrests attached to said stringers, casters at one end of said stringers engaging the floor, uprights resting on the floor, the other ends of said stringers resting on said uprights, and means including weighted hoisting ropes attached to said other ends of said stringers for swinging the seat assembly against the wall while resting solely on said casters, and means for suspending the weighted hoisting ropes.

2. In a movable audience seat for an enclosed space, a plurality of stringers, seat member and footrests attached to said stringers, casters at one end of said stringers engaging the floor, rollers at the other end of said stringers engaging the wall, uprights attached to the wall and resting on the floor, the other ends of said stringers resting on said uprights, weighted hoisting ropes attached to said other ends of said stringers, and means for suspending the weighted hoisting ropes.

3. In a movable audience seat for an enclosed space, a plurality of stringers, seat members and footrests attached to said stringers, casters at one end of said stringers engaging the floor, rollers at the other end of said stringers, uprights attached to the wall and resting on the floor, the top ends of said uprights being inclined towards the wall, a pivoted lever near the top of each upright on which said rollers are seated, weighted hoisting ropes attached to the upper ends of said stringers above said rollers, and means for suspending the weighted ropes.

JAMES H. ADAMSON.