Nov. 24, 1970 C. H. HARPER 3,541,742

THEATER SEATING

Filed Aug. 7, 1968

Fig. 1

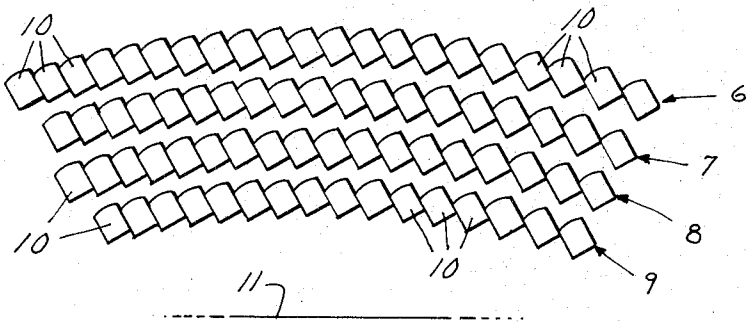


Fig. 2

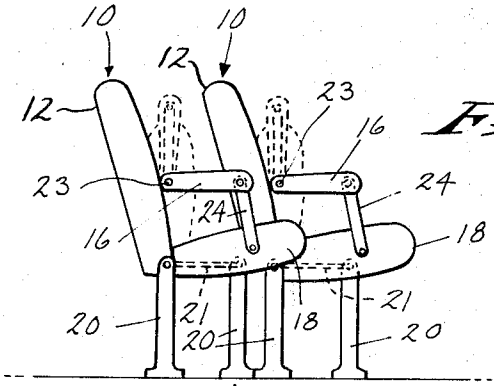
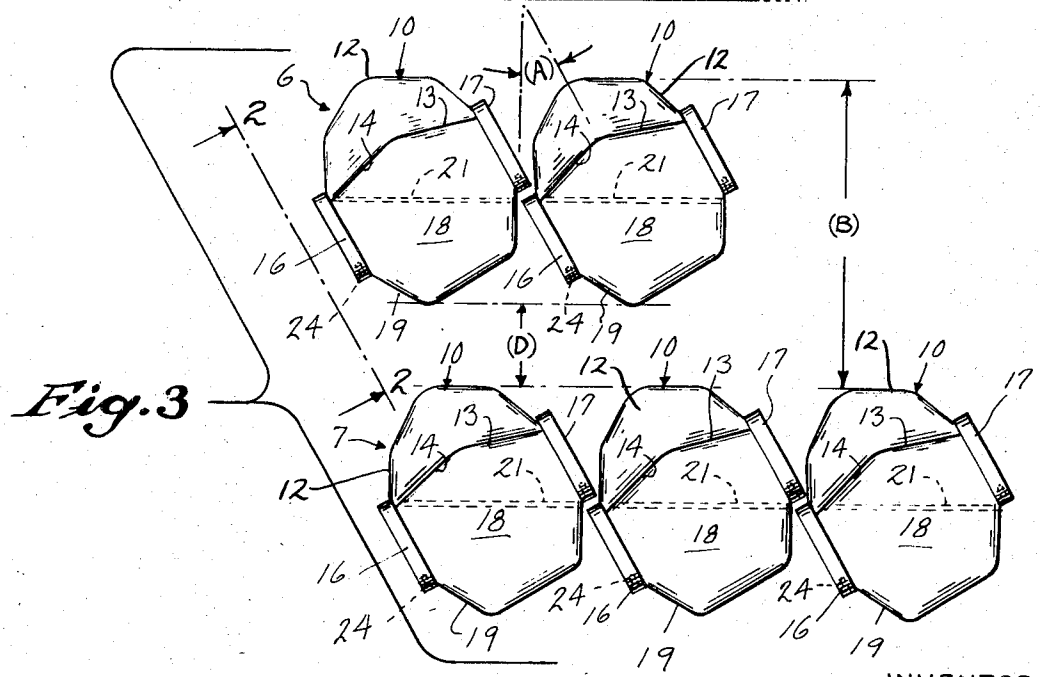


Fig. 3



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THEATER SEATING

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ABSTRACT OF THE DISCLOSURE

A seating arrangement for theaters and auditoriums and the like features specially-designed seats positioned at an angle relative to the normal line of vision to the stage or screen, which angular arrangement provides greater leg and knee room between the seats and the backs of the seats in front thereof to enhance the comfort of persons seated therein without reducing the seating capacity of the room.

BACKGROUND OF THE INVENTION

Field of the invention

The present invention relates to seats and seating arrangements for theaters and other halls and auditoriums having rows of seats therein.

Description of the prior art

As is well known, the customary practice in arranging the seats in theaters and other multiple-seat rooms is to have all of said seats facing substantially forwardly. Unfortunately, in most conventional theaters and auditoriums having such a seating arrangement the rows are relatively closely spaced in order to obtain maximum utilization of the available seating area, with the result that the space between said rows provides minimum knee room for the comfort of the occupants. Moreover, with such closely-spaced rows in many instances when someone wishes to leave or enter the row it is necessary for the people in the row to stand up and raise or retract their seats in order to let the person pass. Obviously this is disconcerting and annoying.

Heretofore rows of seats have occasionally been arranged diagonally in buses and airplanes in order to permit a passenger to look out the window without having his view obstructed by the person seated next to him. In addition, angular rows of seats have been employed in planes to allow a passenger to stretch his legs out under a service table or the like adjacent the seat in front of him. As far as applicant is aware, however, specially-designed seats and an angular seating arrangement similar to that featured in the present invention has never been employed in a theater or the like. The present invention is designed to increase the patrons' knee room for added comfort as well as to facilitate the passage of people along the row, and it is also designed to increase the seating capacity of the theater.

Examples of the prior types of seats and seating arrangements hereinabove mentioned are disclosed in the following U.S. patents: No. 1,105,990; No. 2,947,349; No. 2,414,730; No. 1,754,465; No. 1,769,731; and No. 1,237,850.

SUMMARY OF THE INVENTION

The present invention comprises a novel seat and seating arrangement for theaters, auditoriums, and other rooms or halls having multiple rows of seats therein, which provides greatly increased knee and leg room between the seats and the seats in front thereof to promote the comfort of the occupants. In addition, the improved seating arrangement comprising the present invention not only does not reduce the seating capacity of the room, it can be utilized to actually increase said seating capacity.

A further object of the invention is to provide a theater seat which is designed for installation at an angle relative to the stage or screen, as described, which seat includes a special cushion and arm rest pivot assembly to permit the movement of said members to an upright, out-of-the-way position when not in use. With said assembly greater clearance is provided between the seats and the seats in front thereof than is obtained with conventional theater seats arranged in similarly-spaced rows.

A further object is to provide a novel and improved seat for theaters and the like wherein each seat includes a pair of individual arm rests, the present invention making it unnecessary for a person to share the arm rests with the persons seated on each side of him, as is required with conventional theater seats.

Still further objects of the present invention are to provide a new and improved seat and seating arrangement for theaters and the like which seats are strong and durable in design, reliable in operation, relatively inexpensive to manufacture, and which are otherwise particularly well adapted for their intended purposes.

BRIEF DESCRIPTION OF THE DRAWING

In the accompanying drawing, illustrating one preferred embodiment of the invention, wherein the same reference numerals designate the same parts in all of the views:

FIG. 1 is a fragmentary top plan view of a portion of a theater having the improved angular seating arrangement featured in the present invention;

FIG. 2 is a side elevational view of a pair of said angularly-disposed seats, taken along line **2—2** of FIG. 3; and

FIG. 3 is an enlarged fragmentary top plan view showing a portion of two adjacent rows of said seats.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to the drawing, the numeral **10** designates the improved seat member featured in the present invention. As will be seen in FIG. 1, in accordance with the invention when the seats **10** are installed in a theater or the like they are arranged in rows, as are conventional theater seats, the number of rows depending upon the spacing therebetween and the size of the room. Unlike conventional seating arrangements, however, each seat **10** is disposed at an acute angle relative to the normal line of vision to the screen or stage **11** at the front of the room, as will be hereinafter described in greater detail.

Said seats **10** include suitable supporting legs **20** (FIG. 2) and if preferred a common leg can be employed between each pair of adjacent seats. As is shown in FIG. 3, in the illustrated form of the invention each of said seats has a back **12** which is provided with angularly-related face portions **13, 14**. The purpose of said angular back design is to increase the seat depth as compared to a seat having a straight back. Moreover, and as will be hereinafter described in greater detail, in plan view the novel seat comprising the present invention is designed to fit within the same rectangular space occupied by a conventional theater seat, while maintaining the same or greater clearance in all dimensions, and the angled faces are necessary to prevent said back member **12** from projecting laterally beyond said intended area. In lieu of said angularly-disposed back faces **13, 14**, it is possible to obtain a generally comparable result by forming the back member **12** concavely on the arc of a curve. In addition to the above advantage, the formation of said seat

backs on a curve, or with angularly-related faces, also permits an occupant to locate his back in the most comfortable position at all times, and it provides infinite variations in the depth of the seat to accommodate people of various leg lengths.

With reference still to FIG. 3, each of the seats **10** includes a pair of arm rests **16**, **17**. Because said seats are disposced diagonally an offset arm arrangement is provided which permits each seat to have its own individual arm rests on each side thereof. Thus, unlike conventional theater seats, there is not a common arm rest between the seats which must be shared by the occupants of adjacent seats. This is an important advantage of the present invention. As appears in FIG. 2, the forward arm rest **16** is pivotally attached to the seat back by a hinge **23**, and the outer end of said arm rest is connected to the cushion **18** therebelow by means of a pivotal strut **24**, the purpose of which will described hereinafter. The opposite arm rest **17** may be of solid, non-pivotal construction, and may be formed as a continuation of the seat back **12** if desired.

The horizontal seat element or cushion **18** in the illustrated embodiment of the present invention is polygonal in plan view to minimize the projection of said seat into the space between the rows, thereby providing increased clearance (D) and facilitating the movement of people into and out of said rows. As mentioned, the present seat is intended to fit diagonally within the same rectangular area occupied by a conventional, forwardly-facing theater seat, and to achieve this it is necessary that the projecting corners of said cushion **18** be eliminated (the opposite corners also being eliminated to obtain symmetry). With the angled seat arranged and illustrated polygonal cushion design, in fact, it has been found that the distance between the cushion leading edge and the back of the seat in front thereof is sufficient in many instances to permit a person to pass along the row without the necessity of the people seated therein standing up and raising their seats to let him by. Moreover, said increased knee and leg room is obtained without shortening the seat depth or changing the pitch of the back. In lieu of the illustrated polygonal seat design it is also possible to utilize circular or rounded cushions, and the invention is not to be limited in this respect.

The cushions **18** in the present invention are pivotally mounted on cross rods **21** which are disposed substantially parallel to the back line of the seat rows, and at an angle relative to the axis of said individual seats. Thus there is provided a novel biased pivot mounting whereby when said cushions are not in use they can be swung to an upright, out-of-the-way position parallel to the back line of the seats in the row in front thereof to provide maximum clearance between the rows for the passage of people therealong. As mentioned, the right or forward arm rests **16** are also pivotal, and are preferably attached to the cushions **18** by means of the rods **24**, with the result that said arm rests are also swung upwardly to a non-projecting position when the cushions **18** are raised, as shown in broken lines in FIG. 2. To facilitate the raising of the seats, in fact, said arms **16** can be grasped and manually pulled upwardly.

In most conventional theaters a distance of thirty-two inches is provided between the backs of one row of seats and the backs of the seats in front thereof, which distance is designated by the letter (B) in FIG. 3 of the drawing, and a space of only five to seven inches is ordinarily provided between the forward edge of the cushions and the backs of the seats in front thereof. With such conventional seats codes ordinarily require that there be an aisle every twelve or thirteen seats to facilitate egress in the event of an emergency. The presence of such aisles takes up space that would otherwise be filled with seats, of course, and substantially reduces the seating capacity of the theater or hall.

In contrast to the conventional seating arrangement, wherein aisles are provided between every dozen or so seats, so-called continental seating provides continuous rows with the only aisles being located at the sides of the room. With such a seating arrangement, however, there must be at least forty-two inches between the backs of the rows in order to provide a required eighteen inch clearance between the seats and the row in front thereof to permit unobstructed movement along a row. Obviously the spacing of the rows that far apart minimizes the seating capacity of the room, and for this reason such so-called continental seating has not heretofore been widely utilized. With the novel angular seating arrangement featured in the present invention, however, it is possible to space the rows only thirty-two inches apart, as in the conventional theater arrangement, while still obtaining the necessary eighteen inch spacing between the raised cushion **18** and the backs of the seats in front thereof. The result is that with the present invention it is possible to utilize continental seating with the rows spaced only thirty-two inches apart, thereby substantially increasing the number of seats that can be installed in a given area. Moreover, the central aisles in conventional threaters usurp choice space which can be occupied by seats in the present invention.

A further advantage of the present invention is that because the seats are installed on a longer, diagonal axis, as compared to the usual forwardly-facing seat arrangement, said seats can be made wider and roomier than conventional theater seats.

As is shown in FIG. 3, in the illustrated embodiment of the invention the seats **10** are arranged at an angle (A) of approximately 30°–45° from the normal line of view to the stage or screen. In actual practice it has been found advantageous to arrange the seats at an angle of about 30°, and with the center lines of said seats extending between the two seats in front thereof to provide relatively unobstructed viewing. It is to be understood, however, that said angle and positioning arrangement can be varied, depending upon the requirements of the particular theater, and the invention is by no means to be limited in this respect. Further, the design of the seats **10** hereinabove described can be modified to best suit the requirements of the particular theater or hall.

In addition to the above-mentioned modifications, it is to be understood that while the seats **10** are illustrated and described herein as being angled in one direction (toward the right in the drawing), said seats could as well be angled in the opposite direction. Moreover, in many instances it will no doubt be desired to have half of the seats angled in one direction with the other half arranged oppositely, in mirror fashion.

From the foregoing detailed description it will be seen that the present invention provides a novel and improved seat unit and seating arrangement for theaters and other auditoriums or multiple-seat halls having a number of advantages over the seating means heretofore employed. What is intended to be covered herein is not only the illustrated embodiment of the invention, but also any and all variations or modifications thereof as may come within the spirit of said invention and within the scope of the following claim.

What I claim is:

1. In a room having a forward stage area and having a plurality of rows of seats, said rows facing said stage area and being arranged one behind the other in substantially parallel relationship, each of said rows including a plurality of closely-adjacent seats, the improved seating means comprising: the seats in each of said rows being arranged at an acute angle relative to the direct line of vision to the forward stage area, the seats in each row being offset relative to the center lines of the seats in the row immediately in front thereof so as not to be aligned directly behind said forward seats, thereby facilitating the view of persons seated therein as well as providing increased leg room between said seats and the seats in front thereof, each of said seats including a back, including a cushion

which is devoid of corners which would project into and reduce the space between said rows, each of said cushions being pivotally mounted on a horizontal axis arranged on a bias relative to the axis of said seat unit and substantially parallel to the back of the row of seats in front thereof, said seats being pivotal from a horizontal position to an upright, out-of-the-way position adjacent the seat back, and each of said seats including a pair of arm rests, one of which arm rests is pivotally attached to said back and connected to said cushion in a manner whereby said cushion and arm rest are pivotal conjointly to an upright, out-of-the-way position.

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