A detachable and adjustable armrest device for pews and sectional seating that can be quickly installed, moved, recessed and removed. The device includes an upper clamp that form-fits sectional seat backs and includes a plurality of adjustment fasteners that firmly secures the armrest to the top end of the sectional seat back. A vertical backboard extends down along the seat back at a common angle from the upper clamp assembly and provides a connecting point for the arm board. The arm board can be connected directly to the vertical backboard by an L-shaped bracket to provide a fixed height armrest. In an alternate embodiment, one end of the L-shaped bracket is connected to an axle that is affixed to the vertical backboard. When the arm board is lifted vertically, it pivots on the axle and can be held in a vertical recessed position of a lock pin. In another embodiment, one end of the L-shaped bracket is held against the vertical backboard by a plurality of guide clamps that allow for vertical movement of the arm board height relative to the vertical backboard. The height adjustment is made by turning a screw running vertically through the L-shaped bracket into a receiving nut attached to the underside of the vertical backboard.
REMOVABLE ARMREST FOR SECTIONAL SEATING

FIELD OF THE INVENTION

[0001] The present invention relates generally to the field of accessories for chairs, pews and sectional seating, and in particular to armrests for pews and sectional seating.

BACKGROUND OF THE INVENTION

[0002] Sectional seating is typically comprised of two end sections and a long seat and back sections in between. The two end sections often provide the only armrests for the entire seating section. Frequently, people need the assistance of an armrest to provide a firm surface on which to push against to aid in going from a seated to a standing position, or vice versa. The people that most often need the assistance of an armrest for ingress and egress from sectional seating are the elderly, the disabled, and the sick. In many instances, there are not enough armrests to meet the needs of the group using the seats. Alternatively, persons needing the assistance of an armrest are forced to use seating in a less preferred location. The problem of inadequate availability of armrests is very prominent in the case with church pews. Pews are a type of sectional seating popular in many places of worship. Since the elderly, disabled and sick are often frequent attendees of places of worship, a need exists for a sectional seating accessory to provide a sturdy armrest that can be easily and quickly installed, moved, adjusted, recessed and removed. In most cases, it is not economically practical to retrofit sectional seating with randomly placed permanent armrests. Moreover, the number of persons who may require or desire the use of armrests will frequently vary greatly from day to day and one location to another. What is needed is a strong, deployable armrest that can be removed from storage when needed, installed at any desired location within the sectional seating, and then removed and restored when not in use or needed.

[0003] Armrest devices may be generally broken into two categories: 1) integral and 2) non-integral. Integral armrests are physically attached to the seat body using fasteners and are not readily removable from the seat body to which they are used. Non-integral armrests are separate items that are intended to be added to an existing seat and can be readily attached and to a seat.

[0004] Examples of integral armrests include U.S. Pat. No. 5,302,000, which presents an armrest and cup holder attached to the seat base with fasteners and extends upward from the seat base. U.S. Pat. No. 7,618,095 describes a dentist’s chair where the armrest follows the movement of the user’s back. U.S. Pat. No. 7,559,609 presents an armrest that is movable in the axial and transverse direction and is rotatable. This device and U.S. Pat. No. 6,502,904 present adjustable armrests that have mounting brackets in the base that attach to the seat device of the seat member.

[0005] Examples of non-integral armrests include U.S. Pat. Nos. 2,658,560; 2,659,423; and 2,751,968. These devices show lightweight armrests placed on top of an automobile seat and held in place by inserting part of the armrest into the space between the seat and the back support. These armrests can be folded up and stored when not in use. U.S. Pat. No. 3,068,048 shows an armrest for an automobile seat that is held in place by hanging over the top of the seat back and includes a padded arm and cup holders. U.S. Pat. No. 2,642,117 shows a portable armrest that can be set up around a chair to provide an armrest on either side of the single seat. This device is also foldable for storage and has its own structure that supports the armrests from the floor around the seat. U.S. Pat. No. 1,962,508 discloses a portable armrest that fits over the passenger window area of a vehicle. This device includes a pair of support brackets with attached springs that form a clamping mechanism to secure the armrest to the vehicle door. U.S. Pat. No. D315,131 discloses a design of a foldable armrest that hangs in place over the seat back.

[0006] Most of these prior art devices are either not capable being mountable on sectional seating such as pews, or do not lend themselves to rapidly being deployed, secured and removed. Moreover, those that are rapidly deployable, lack adequate structural strength or adjustability to work across a broad range of weight forces applied to them.

[0007] What is needed in the art is a portable armrest that can be rapidly installed and firmly secured to the backboard of sectional seating. What is further needed in the art is a device that when installed can be readily be made immobile given the unique contours of the backs of different sectional seating designs. What is further needed in the art is an armrest that in addition to these previous features also has sufficient structural strength to safely support heavier persons and remain immobile under angular force loads applied to them during use.

SUMMARY OF THE INVENTION

[0008] The device presented herein provides an armrest that can be quickly installed, secured and removed from sectional seating. This device can be readily secured to the top of the sectional seat back to lock the device into a stable position. In one embodiment of the device, it can be readily folded up into a vertical position when not in use. In another embodiment of the device, it can be vertically adjusted to accommodate the preferences of the user while maintaining its structural and positional strength.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The features and advantages of the disclosed adjustable armrest device are readily apparent and are to be understood by referring to the following detailed description of the preferred embodiments of the present invention, taken in conjunction with the accompanying drawings, in which:

[0010] FIG. 1 is a cross-sectional view of one embodiment of the current invention the basic fixed-position armrest with the parts separated;

[0011] FIG. 2 shows two perspective views of one embodiment of the device where the armrest can be moved from a horizontal resting position to a vertical stowed position;

[0012] FIG. 3 shows a perspective of one embodiment of the device where the armrest height is adjustable. The various components of the assembly are shown in a separated view;

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013] Referring in specific detail to the drawings, with common reference numbers identifying similar or identical elements, steps, and features, as shown in FIG. 1, the present disclosure describes a fixed-position armrest device for use with sectional seating, and in particular pews. In the illustrative embodiment shown in FIG. 1, the armrest device is comprised of a top clamp head 1, an adapting spacer 2, a vertical backboard 3, and the arm board 4. The device derives much of
its structural strength from the clamping head assembly, which binds the device to the sectional seat back. With the top clamp fastener 9 and 10 loosened, the device is placed over the backboard of the sectional seat back at the desired location. For optimum binding strength, the downward facing of the adapting spacer 2 is shaped to match the top railing of the sectional seat back. Hence, it is a feature of this design that the adapting spacer can vary in width and face contour to accommodate a variety of functional and decorative top railing designs common on sectional seating. The same basic embodiment can be used for various designs simply by installing a conforming adapter spacer 2. On wooden sectional seating, such as pews, a shaped board, called a top runner, extends along the topside of the seat backboard. Typically, the top runner has a lip that extends down over the backside of the seat backboard to improve gripping by the hand of patrons using the seats. The adapting spacer 2 is made to match the particular top shape and thickness of the sectional seat back. The length of the top clamp head 1 is made to fit the depth of the bottom lip of the top runner. In FIG. 1, an adapting spacer made for a ½" square-topped or arch-top sectional seat back with a 1" top runner lip depth is shown. However, it is clear that other spacer shapes and top clamp head depths could be used to match other top runner shapes or other sectional seat backs without top runners.

As the top clamp fastener nut 10 is tightened, the top clamp head 1 is pulled toward the backside of the sectional seat backboard. The top clamp head has a foot 11 that contacts the backside of the sectional seat board when tightened. The offset angle the vertical backboard member 3 makes relative to the adapting spacer 2 also aids in the clamping force applied to the sectional seat back. As the clamp elements are pulled together under the force of the fastener, the offset angle is compressed providing tension on the sectional seat backboard. The clamping action of device prevents the device from sliding along the sectional seat backboard as lateral forces are applied to the arm board 4.

In continued reference to FIG. 1, the arm board 4 is secured to the vertical backboard 3 using a L-shaped bracket 5. A threaded bolt 6 having one end with reverse threads is insert through the L-shaped bracket 5 and the arm board pin slot 8 and screwed firmly into the arm board 4. A fastening nut 7 is applied and tightened to secure the arm board 3 to the vertical backboard 3. The arm board 3 can have a foam pad placed on top and a fabric upholstered thereto to provide improved comfort and appearance.

FIG. 2 shows two perspective views of another embodiment of the current invention where the arm board 4 is attached to the vertical backboard 3 by a means that allows the arm board to be rotated between a “up” position and a “down” position. The L-shaped bracket 20 is connected on one end to the arm board 4 and on the other end to the axle 22. The axle bracket assembly is comprised of a u-shaped body 21 and the axle 22. The axle bracket assembly cradles the vertical backboard 3 and is attached to the backside of the vertical backboard 3 by screw-type fasteners. The two ends of the u-shaped axle bracket include a hole for receiving the two ends of the axle 22. The axle 22 is a hollow rigid tube of length generally greater than the width between the two holes in the axle bracket. Once inserted between the holes and the ends of the axle are projecting through the holes, the ends of the axle are then flared to a diameter larger than the holes. This prevents axial movement of the axle but allows for rotational movement.

In continued reference to FIG. 2, a locking pin assembly is shown to hold the arm board 4 in the vertical position after it is moved into place. An A-shaped member 23 rests within a recessed cavity 26 within the vertical backboard 3. When ready to lock the armrest in the vertical position, the user pulls the outer end of the A-shaped member 23 from the cavity and wedges it under the end of the vertical arm board. A securing lip 24 attached to the underside of the L-shaped bracket engages the outer end of the A-shaped member 23. Under the arm board’s weight, the outer end of the A-shaped member wedges against the securing lip 24 preventing the arm board 4 from rotating back down to the horizontal position. The inner end of the A-shaped member is comprised of two feet, which are held against the back of the recessed cavity within the backboard 3 by a pair of staples. The staples allow rotational movement of the A-shaped member but maintain the inner end of the A-shaped member firmly against the backboard 3. When the armrest is in the horizontal position, the securing lip 24 recesses into a slot 27 cut into the outer face of the vertical backboard.

In reference to FIG. 3, an alternate embodiment is shown where the arm board 4 is vertically adjustable along the backboard 3 by means of an adjustment screw 33. In this embodiment, the L-shaped bracket 5 is attached on one end to the arm board 4 by a plurality of fasteners 34. The other end of the L-shaped bracket 5 is held against the backside of the backboard 3 by a pair of U-shaped guide clamps 30. The guide clamps are secured to the backboard 3 by a plurality of fasteners that are set into the side faces of the backboard 3. When secured to the backboard 3, the guide clamps provide a vertical channel for the one end of the L-shaped bracket 5 to move up and down while preventing that end from separating away from the back face of the backboard 3.

In continued reference to FIG. 3, the vertical adjustment means of the arm board 4 is further comprised of a screw guide 32 and receiver nut 31. The adjustment screw 33 is placed within a hollow tube screw guide 32 and is threaded into the receiver nut 31. The receiver nut has a base that is attached to the bottom side of the backboard 3 by a plurality of fasteners 35. A vertical hole is drilled into the center of the backboard 3 above the receiver nut to allow the top end of the adjustment screw to extend above the receiver nut 31 when the arm board 4 is adjusted to its highest position.

For all of the embodiments described herein, padding and upholstered fabric can be wrapped around the vertical backboard 3 and the arm board 4 to provide additional comfort to users as they press against these members during use.

While this armrest device is particularly shown and described herein with reference to the preferred embodiments, it is to be understood that various modifications in form and detail may be made without departing from the scope and spirit of the present invention. Accordingly, modifications such as any examples suggested herein, but not limited thereto, are to be considered within the scope of the present invention.

What is claimed is:
1. A removable armrest for sectional seating comprising:
an upper clamp assembly having a top clamp head, an adapting spacer, and a vertical board extending downward along the face of the sectional seating backboard; one or more fasteners extending through the top clamp head, adapting spacer, and top end of the vertical board
such that when tightened, the fasteners pull these pieces together to securely clamp the armrest to the top of the sectional seat;
an arm board connected on one end to the bottom end of the vertical board using one or more fasteners with the connecting end of said arm board having a face cut at an angle to match the angle of the section seat backing to provide a horizontal surface for placing an arm; and
an ell-bracket secured to the backside of the vertical board on the lower end and the underside of the arm board at the connecting end where vertical section of the ell-bracket is angled to match the angle of the sectional seat back.

2. The armrest of claim 1 where the spacing adapter is further comprised of a top side, bottom side, and width where the contour of the bottom side of the spacing adapter is shaped to conform to the top rail of the sectional seat back and the width of the spacing adapter adjusted to match the thickness of the top rail of the sectional seat back.

3. The armrest of claim 1 where the top clamp head is further comprised of a top end and a bottom end where said bottom end has a lip extending inward toward the sectional seat back and engages the sectional seat back when the upper clamp assembly is tightened and the height between the top end and bottom end is adjusted to match the depth of the top rail of the sectional seat back.

4. The armrest of claim 1 where padding and upholstered fabric are placed over the outer surface of the vertical board and upper surface of the arm board to provide a comfortable surface for the user to engage the armrest.

5. A removable armrest for sectional seating comprising:
an upper clamp assembly having a top clamp head, an adapting spacer, and a vertical board extending downward along the face of the sectional seating backboard; one or more fasteners extending through the top clamp head, adapting spacer, and top end of the vertical board such that when tightened, the fasteners pull these pieces together to securely clamp the armrest to the top of the sectional seat;
a roller clamp comprised of a tubular shaped roller and a U-shaped clamp where said vertical board extends through the U-shaped clamp, the tubular roller is secured between the open ends of the U-shaped clamp where the roller rests on the outer face of the vertical board.

an arm board having proximal and distal end where the face of the proximal end cut at an angle to match the angle of the section seat backing to provide a horizontal surface; and
an ell-bracket having a horizontal and vertical section where the horizontal section is attached to the underside

of the proximal end of the arm board and the end of the vertical section is attached to the tubular shaped roller;

6. The armrest of claim 4 further comprising a locking mechanism for holding the arm board in the vertical orientation comprised of
an A-shaped pin having a pair of feet secured to the outer face of the vertical board such that the pin can rotate freely away from the outer face of the vertical board but remain attached thereto;
a securing lip attached to the back side of the vertical section of the ell-bracket for receiving the top end of the A-shaped pin when the arm board is rotated into the vertical position and preventing the arm board from rotating downward.

7. The armrest of claim 4 where padding and upholstered fabric are placed over the outer surface of the vertical board and upper surface of the arm board to provide a comfortable surface for the user to engage the armrest.

8. A removable armrest for sectional seating comprising:
an upper clamp assembly having a top clamp head, an adapting spacer, and a vertical board extending downward along the face of the sectional seating backboard; one or more fasteners extending through the top clamp head, adapting spacer, and top end of the vertical board such that when tightened, the fasteners pull these pieces together to securely clamp the armrest to the top of the sectional seat;
a horizontal arm board;
an ell-bracket having a horizontal section and a vertical section where on one end of the horizontal is attached to the arm board and near the other end of the horizontal section is a hole for receiving a bolt guide tube and the vertical section is held against the back face of the vertical board by a plurality of C-shaped clamps attached to the vertical board so that the ell-bracket can move vertically relative to the vertical board but not horizontally; and

an arm board height adjustment assembly comprised of a receiving nut base fastened to the underside of the vertical board, a threaded bolt inserted through the ell-bracket and tube guide and into the receiving nut base, and a recessed cavity inside the vertical board for receiving the end of threaded bolt that extends past the nut base as the arm board is raised by the rotation of the threaded bolt.

9. The armrest of claim 8 where padding and upholstered fabric are placed over the outer surface of the vertical board and upper surface of the arm board to provide a comfortable surface for the user to engage the armrest.

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