

[54] **ARM REST**  
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2,597,860 5/1952 Gerber et al..... 297/440  
 2,914,118 11/1959 Sawyers..... 297/416  
 3,170,729 2/1965 Grant..... 297/440

Primary Examiner—Casmir A. Nunberg

[22] Filed: **Apr. 30, 1973**

[57] **ABSTRACT**

[21] Appl. No.: **355,940**

A combination bed and lounge having a foldable mattress selectively usable as a bed and a seat. The mattress is supported on wheels and moves from a horizontal bed position to a seat position relative to an upright cabinet or wall. The head section of the mattress is guided upwardly into the cabinet by guide rails attached to the inside walls of the cabinet. A transverse cushion attached to the front of the cabinet alternatively serves as a bed head board and a seat back rest. Upright arm rests are removably mounted on opposite sides of the foot section of the mattress. Each arm rest has a removable top cap.

**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 212,079, Dec. 27, 1971, Pat. No. 3,729,753.

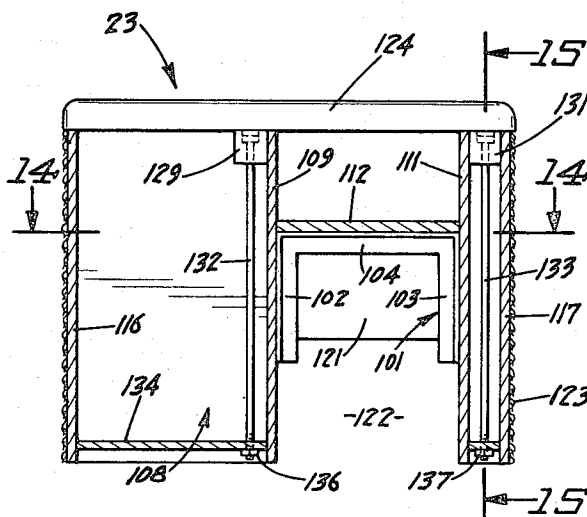
[52] U.S. Cl..... **297/416, 5/2 R, 297/440**  
 [51] Int. Cl..... **A47c 7/54, A47c 13/38**  
 [58] Field of Search ..... **297/411, 416, 440; 5/2 R, 5/12, 17, 18; 312/264**

**References Cited**

**UNITED STATES PATENTS**

[56] 1,933,074 10/1933 Richardson..... 312/265

**12 Claims, 15 Drawing Figures**



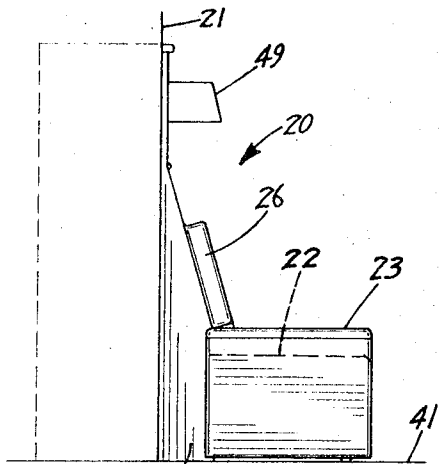


FIG. 1

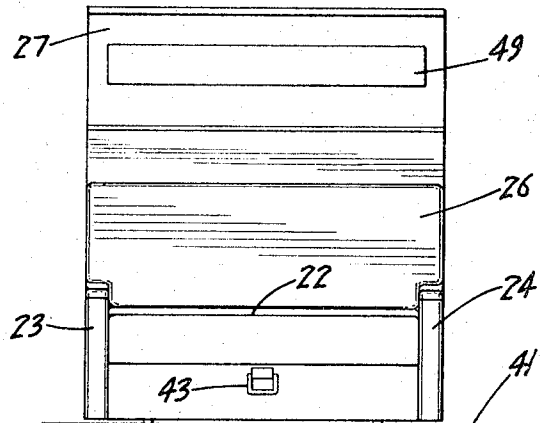


FIG. 2

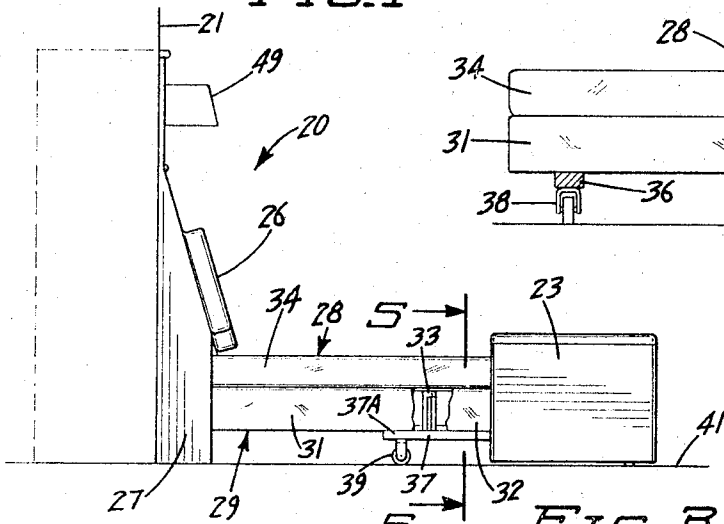


FIG. 3

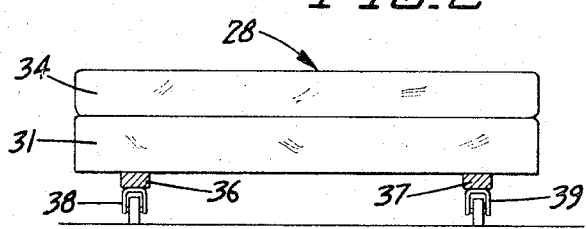


FIG. 5

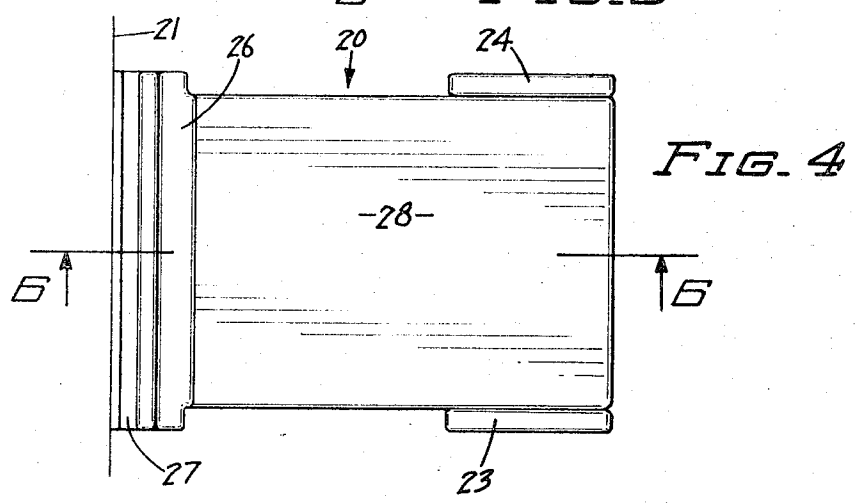
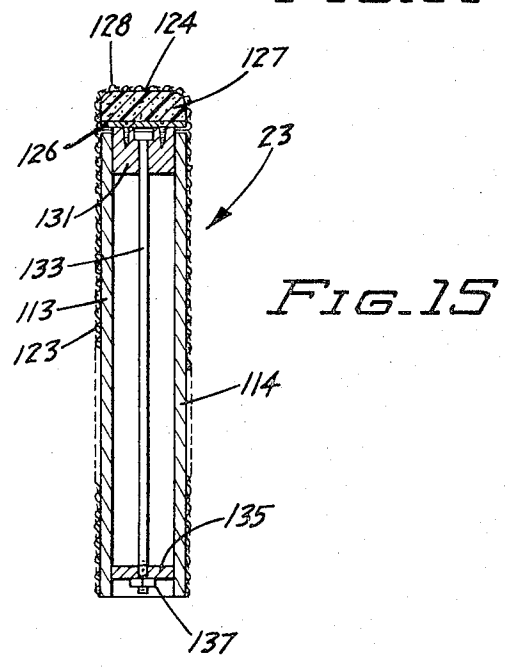
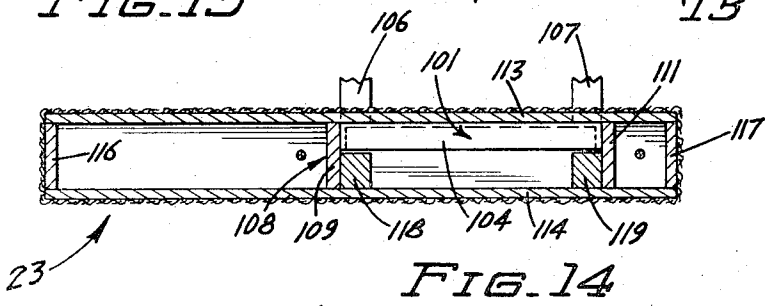
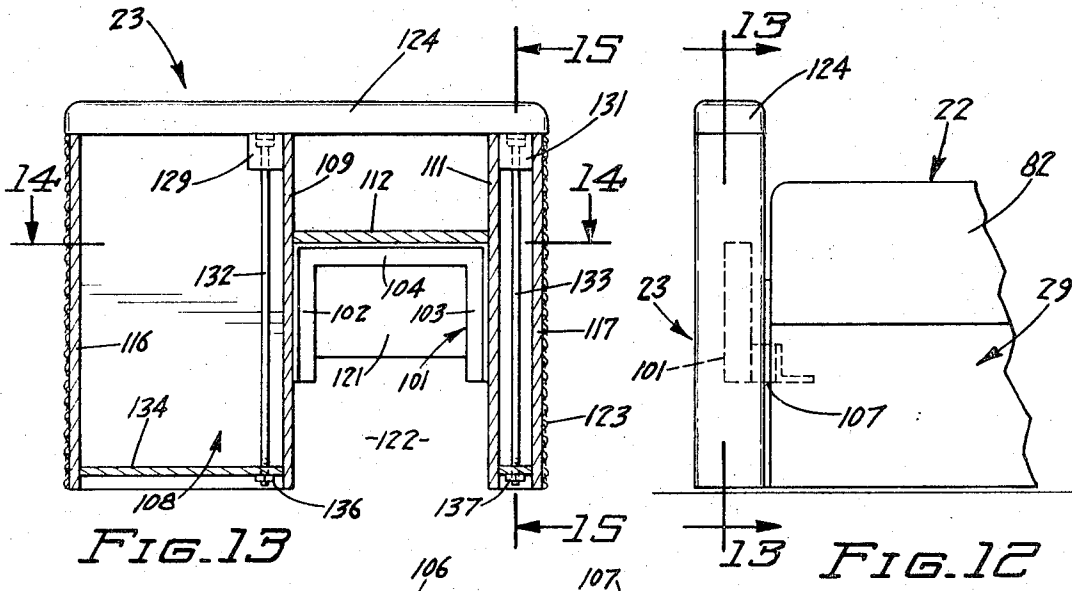


FIG. 4







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ARM REST

## CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of U.S. Pat. application Ser. No. 212,079 filed Dec. 27, 1971, now U.S. Pat. No. 3,729,753.

## BACKGROUND OF INVENTION

Folding beds and combination bed and lounges have been developed to provide efficient utilization of building space and flexibility in use of a room. Folding beds are used in apartments, cabins, recreational vehicles, mobile homes and like places where floor space is restricted. U.S. Pat. No. 3,491,383 discloses a combination bed and lounge having a back rest that is movable to a first generally horizontal position to cover a portion of a mattress thereby forming a lounge and movable to a second upright position away from the mattress to form a bed. While this structure provides a dual purpose, it does not reduce the floor space when the unit is used as a lounge. Removable and interchangeable arms for furniture are disclosed by Kris in U.S. Pat. No. 3,074,762 and Grant in U.S. Pat. No. 3,170,729. These arms are mounted on fixed side portions of the furniture.

## SUMMARY OF INVENTION

The invention relates to a combination bed and lounge unit having a seat and upright arm rests located adjacent the opposite sides of the seat. Each arm rest has upright guide members associated with a support to removably mount the arm rest on the support. An elongated cap is removably attached on top of the arm rest.

## IN THE DRAWINGS

FIG. 1 is a side elevational view of the combination bed and lounge unit of the invention showing the unit in the lounge position;

FIG. 2 is a front elevational view of FIG. 1;

FIG. 3 is a side elevational view of the combination bed and lounge unit of the invention showing the unit in the bed position;

FIG. 4 is a top plan view of FIG. 3;

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 3;

FIG. 6 is an enlarged sectional view taken along the line 6—6 of FIG. 4;

FIG. 7 is an enlarged sectional view taken along the line 7—7 of FIG. 6.

FIG. 8 is an enlarged sectional view taken along the line 8—8 of FIG. 7;

FIG. 9 is an enlarged sectional view taken along line 9—9 of FIG. 8;

FIG. 10 is a sectional view similar to FIG. 6 showing the unit in the lounge position.

FIG. 11 is an enlarged cross sectional view taken along line 11—11 of FIG. 7;

FIG. 12 is a fragmentary front elevational view of an arm rest attached to the side of a seat;

FIG. 13 is a sectional view taken along line 13—13 of FIG. 12;

FIG. 14 is an enlarged sectional view taken along line 14—14 of FIG. 13; and

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FIG. 15 is an enlarged sectional view taken along line 15—15 of FIG. 13.

Referring to the drawings there is shown in FIGS. 1, 2 and 3 the combination bed and lounge unit or bed-lounge of the invention indicated generally at 20, mounted in an upright wall 21 of a housing unit, as an apartment, mobile home, travel trailer, hotel, motel, condominium and the like. The bed and lounge unit 20 is a dual purpose unit usable as a lounge, sofa or seat as shown in FIGS. 1 and 2 and as a bed, as shown in FIGS. 3, 4 and 5. This unit can be converted from a lounge to a bed by moving the seat section in a forward direction to a horizontal position.

The bed and lounge unit 20 comprises a transverse seat portion 22 located between upright arm rests 23 and 24. Projected upwardly from the rear edge of the seat portion 22 is a back rest 26. The back rest 26 is movably connected to a housing or cabinet 27 having a chamber for receiving the head section of the mattress indicated generally at 28.

As shown in FIGS. 3 and 5, mattress 28 has a base or a bottom box spring assembly 29 comprising a head section 31 and a foot section 32. Hinge assemblies 33 at opposite sides of the base 29 pivotally join the top portions of the adjacent parts of the sections 31 and 32 together. Located over the box spring assembly 29 is a top mattress or cushion 34, preferably of flexible foam plastic or foam rubber.

A pair of longitudinal transversely spaced beams 36 and 37 are secured to the bottom of the foot section 32. Each beam has a forwardly extended portion 36A and 37A located under a portion of the head section 31. When the mattress 28 is in the bed position, beam portions 36A and 37A support the rear of head section 31. Wheel assemblies 38 and 39 secured to the beams 36 and 37 respectively support the mattress 28 on the floor or similar supporting surface 41.

Referring to FIG. 6, a transverse upright front panel 42 extends across the foot or outside end of the box spring section 32 to form a panel or closure to conceal the longitudinal beams and the wheel assemblies 38 and 39. Secured to the mid-portion of the front panel 42 is a handle 43 used as a hand grip to facilitate the movement of the bed and lounge unit between the seat position and the bed position.

The housing or cabinet 27 has spaced upright side walls 44 and 46 attached to a top wall 47. The upper portion of the front of the cabinet has a front panel 48. Secured to the panel 48 is a bed lamp or hood 49 accommodating electric lamps and the controls therefore. The front panel 48 can be part of the wall of the structure.

Mounted on the inside of the side walls 44 and 46 are upwardly and rearwardly extended guide rails 51 and 52. As shown in FIG. 9, fasteners 53 as screws, bolts and the like, are used to secure the guide rails 51 and 52 to the side walls 44 and 46. The bottom of each guide rail has a stop 54 closing the bottom of the rail. As shown in FIG. 7, the head section 31 of the box spring assembly has forwardly directed frame members 56 and 57 positioned adjacent the rails 51 and 52. Rollers 58 and 59 ride on the rails 51 and 52. As shown in FIG. 9, roller 58 is mounted on an axle 61 secured to the frame member 57 with a U-bolt 62. The roller 59 is mounted on an axle attached to frame member 57 with a U-bolt. The rollers 58 and 59 engage the stops 54 to fix the lower most and horizontal position of the

box spring assembly Section 31. When the box spring assembly Section 31 is in the lower most position the rear portion of the Section 31 rests on the forward portions 36A and 37A of the supporting longitudinal beams 36 and 37.

As shown in FIG. 8, the box spring assembly Section 31 has a rigid base 63, preferably of plywood. Secured to the top edges of the base 63 are angle irons 64. Upright edge members 66 are attached to the angle irons to define a cavity for a plurality of spring units 67. The edge members and spring units are covered with suitable padding 68. A fabric covering 69 covers the top and sides of the box spring assembly Section 31. The box spring assembly section 32 is constructed in a similar manner.

As shown in FIGS. 6 and 10, the adjacent corners of the box spring assembly sections 31 and 32 have upright arms 71 and 72 that are pivotally joined together at their upper ends forming hinge assemblies 33. The adjacent springs across the box spring assembly can also be coupled together to form a continuous transverse hinge across the box spring assembly. The padding 68 and the covering is continuous on the top of the entire box spring assembly 29.

A transverse counter weight 73 is connected with a pair of cables 74 to the frame members 56 and 57 to aid in the upward and forward movement of the forward section of the bed. The cables 74 are trained over pulleys 76 secured to the top wall 47 of the cabinet 27.

A cross beam 77, shown in FIGS. 6, 7 and 10, extends between the side walls 44 and 46 across the bottom of the housing. The cross member or beam 77 has a pair of steps 78 and 79 having ramps and shoulders for the forward wheels 38 and 39. As shown in FIG. 10, the wheels 38 and 39 are positioned over the crest of the ramps, thereby holding the bed and lounge unit 20 in the lounge position. The bed and lounge unit 20 can be held in the lounge position, as shown in FIG. 10, with releasable locks or spring biased detents (not shown) mounted on the side walls 44 and 46 and engageable with the side beams 36 and 37. The cross beam 77 can be removed or positioned so that it does not obstruct the movement of wheel assemblies 38 and 39.

A seat cover or seat cap 82 is positioned over the seat portion 31 of the mattress. Seat cover 82 has a forward or front portion 83 that extends downwardly and is releasably attached to the front panel 42. The seat cover 82 has downwardly directed sides and back or rear portion 84 that extends under the back rest 26. A transverse plate 86 is adjustably mounted on the bottom and rear side of the back rest. As shown in FIG. 7, the plate 86 has a pair of slots 87 receiving releasable fasteners 88 whereby the plate can be adjusted relative to the back rest 26. FIG. 11 shows the lower edge of plate 86 engaging and holding the cover 82 on the seat 22.

As shown in FIGS. 6 and 10, the back rest 26 includes a support panel 89 attached to the lower edge of the front panel 48 with a transverse hinge 91. A pair of pivoted friction linkages 92 connected to the side walls 44 and 46 and the panel 89 are used to retain the back rest in its adjusted positions, shown in broken lines in FIG. 6. Linkages 92 can be arranged so that the back rest 26 will automatically move forward and up when the mattress 28 is moved from the seat position to the bed position.

In use, with the bed and lounge unit 20 in the seat position shown in FIGS. 1, 2 and 10, the mattress 28 is transversely bent approximately across the mid-portion with the head portion extended upwardly to the cabinet 27. The top section 31 of the box spring assembly is supported with the rollers 58 and 59 on the upper ends of the guide rails 51 and 52. The wheels 38 and 39 are in their lock or hold positions over the step or ramps 78 and 79 in the cross beam 77. The space between the head portion of the mattress and panel 89 can be used to store pillows and extra blankets.

The conversion of the bed and lounge unit 20 from the seat position to the bed position is accomplished by initially raising the back seat 26 as shown in broken lines in FIG. 6. The handle 43 is then used to pull the mattress, forcing the wheels 38 and 39 over the steps 78 and 79. The mattress moves out to its bed position shown in FIGS. 3, 4, and 6. When the rollers 58 and 59 engage the stops 54 at the end of the guide rails 51 and 52, the mattress 28 is in its horizontal or prone position. The back rest 26 is then moved back to its down position, shown in full lines in FIG. 6, to provide a head board for the bed.

Referring to FIGS. 12 to 15, there is shown an arm rest 23 located adjacent one end of seat 22. Arm rest 23 is removably mounted on a support 101 attached to the frame of the seat. The arm rest 24 on the opposite side of the seat is identical in structure and is removably mounted on a similar support.

Support 101 comprises a pair of upwardly directed arms 102 and 103 connected to a top cross member 104 to form a generally inverted U-shaped structure. The lower ends of the arms 102 and 103 are secured to inwardly directed members 106 and 107 secured to the frame of the box spring assembly 29.

The arm rest 23 has a skeleton framework indicated generally at 108 comprising a pair of upright members 109 and 111 positioned in close engagement with outside faces of the upright arms 102 and 103. A generally horizontal cross member 112 is attached to the upright members 109 and 111 to provide a stop engageable with the top of the cross member 104. The members 109 and 111 are secured to generally upright side panels 113 and 114. Opposite ends of the side panels 113 and 114 are connected to upright ends 116 and 117. Spacers 118 and 119, shown in FIG. 14, are located between the side panel 114 and the support 101 to minimize the lateral movement of the arm rest 23 relative to the support 101. Side panel 113, upright members 109 and 111 and the spacers 118 and 119 form an upwardly directed opening or pocket 121 for receiving the support 101. The side panel 113 has a lower opening 122 which permits the arm rest 23 to be located in the pocket 121 in a manner so that the lower edge of the arm rest is located in close proximity with the floor. A suitable cover 123, has a fabric, leather, synthetic material or wood panel surrounding the side panels and ends on 116 and 117.

Located along the top of the arm rest is a cap 124. The cap 124 can be removed for cleaning and repair as well as recovering without disassembling the arm rest. The cap 124 has a base plate 126 supporting an elongated flexible pad 127. A cover 128 positioned over the pad is secured to the bottom of the base plate. Secured to and projected downwardly from the base plate 126 are a pair of positioning blocks 129 and 131. Block 129

extends downwardly adjacent the upright member 109.

In a similar manner, block 131 extends downwardly between the upright member 111 and the end 117. Elongated rods 132 and 133 secured to the blocks 129 and 131 extend downwardly through suitable openings in the bottom plates 134 and 135. Nuts 136 and 137 threaded on the rods 132 and 133 secure the cap 124 to the top of the framework. The cap 124 can be readily removed by removing nuts 136 and 137 and separating the cap from the remainder of the arm rest.

Support means comprising a pair of laterally directed bolts can be used to attach arm rest 23 to the frame of the seat. Nuts on the bolts can be used to fix the position of the arm rest on the bolts and adjust the lateral position of the arm rest 23 relative to the side of seat 22. A block or similar member may be secured to the frame to accommodate the bolts.

While there has been shown and described a preferred embodiment of the combination bed and lounge and removably mounted arm rest of the invention, it is understood that various changes in shape and structure may be made by those skilled in the art without departing from the spirit of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An arm rest adapted to be removably mounted on an upright support extended from a piece of seating furniture and having opposed upright portions, said arm rest comprising: frame means having interior spaced first upright members adapted to be positioned adjacent said opposed portions of the upright support, side panel means located between the first upright members, a second cross member located across the upper portions of the first upright members, said first upright members and side panel means and second cross member forming a pocket for receiving said upright support, said second cross member, adapted to engage the upright support to limit downward movement of the arm rest relative to the upright support, and means covering the frame means.

2. The arm rest of claim 1 including: a top member positioned along the top of the frame means, and means removably attaching the top member to the frame means.

3. The arm rest of claim 2 wherein: the means removably attaching the top member to the frame means in-

cludes a plurality of downwardly directed rods and means on the rods cooperating with the frame means to hold the top member on the frame means.

4. The arm rest of claim 1 including: a top member extended along the top of the frame means, and means secured to the top member and projected into the frame means to position the top member on the frame means.

5. The arm rest of claim 1 including: third spaced upright members positionable adjacent opposite sides of the upright support to restrict lateral movement of the arm rest relative to the upright support.

6. The arm rest of claim 1 wherein: the means covering the frame means comprise side panels and end members attached to the side panels.

7. The arm rest of claim 1 including: a top member positioned along the top of the frame means, said top member having a rigid base, cushion means located on the base and cover means located over the cushion means and attached to the base, and means removably attaching the top member to the frame means.

8. The arm rest of claim 7 wherein: the means removably attaching the top member to the frame means includes a plurality of downwardly directed rods and means on the rods cooperating with the frame means to hold the top member on the frame means.

9. An arm rest comprising: frame means including laterally spaced side panels, end members attached to the side panels forming an open top box structure, a top member closing the open top of the frame means, block means fastened to the top member projected into the open top of the frame means to position the top member on the frame means, a plurality of rods fastened to the top member and downwardly directed into the frame means and means on the rods cooperating with the frame means to releasably hold the top member on the frame means whereby the top member can be removed and replaced without disturbing the frame means.

10. The arm rest of claim 9 including: support means for mounting the frame means on a member.

11. The arm rest of claim 10 wherein: the support means includes an upright member accommodating the frame means.

12. The arm rest of claim 10 wherein: the support means includes a plurality of laterally directed members.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,841,702 Dated October 15, 1974

Inventor(s) Clarence R. Johnson et al

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4, line 14, "seat" should be --rest--.

Signed and sealed this 17th day of December 1974.

(SEAL)  
Attest:

McCOY M. GIBSON JR.  
Attesting Officer

C. MARSHALL DANN  
Commissioner of Patents