United States Patent [19]

Black

[11] **3,896,512**

[45] **July 29, 1975**

[54] **INSTITUTIONAL BED**

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[22] Filed: **Sept. 6, 1974**

[21] Appl. No.: **503,730**

[52] **U.S. Cl.** **5/17;** 5/12; 5/58

[51] **Int. Cl.**[2] **A47C 13/38;** A47C 17/14

[58] **Field of Search** ..... 5/2 B, 12, 17, 18, 58; 312/293, 297; 297/191, 192, 243

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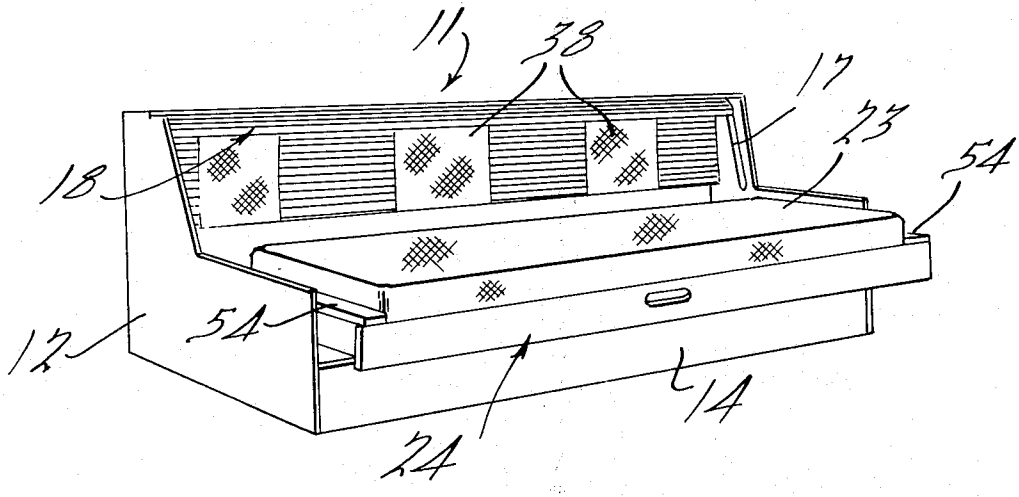
Primary Examiner—Casmir A. Nunberg

Attorney, Agent, or Firm—Harness, Dickey & Pierce

[57] **ABSTRACT**

The institutional bed is to be employed individually or as a cluster in dormitories, auditorium, dining, storage areas and the like. The many uses for the unit make it adaptable for assemblying in clusters while providing a degree of privacy. A table or desk may be raised from the back of the unit into useable position for a unit therebehind with the base used as a storage area, particularly for bed clothing. A back rest is made of strips which move as a unit to storage positions somewhat as a roll top of a desk. The mattress box is mounted on a support which is tilted to the rear and is moved to horizontal position when pulled outwardly.

5 Claims, 12 Drawing Figures



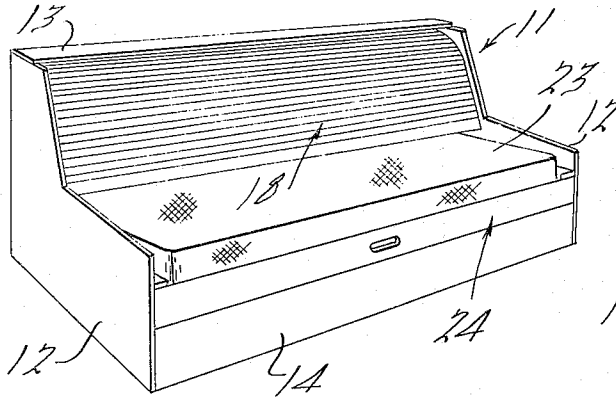


Fig. 1.

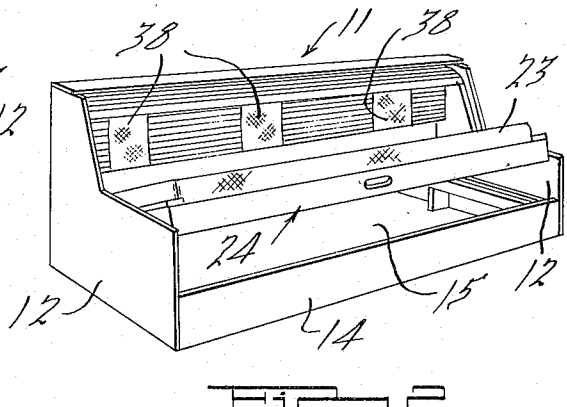


Fig. 2.

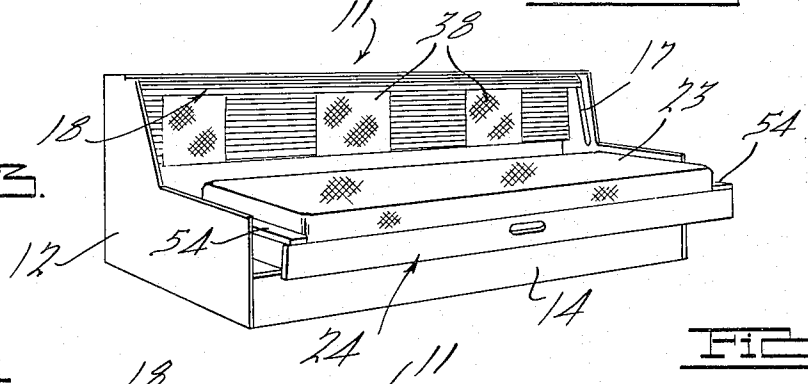


Fig. 3.

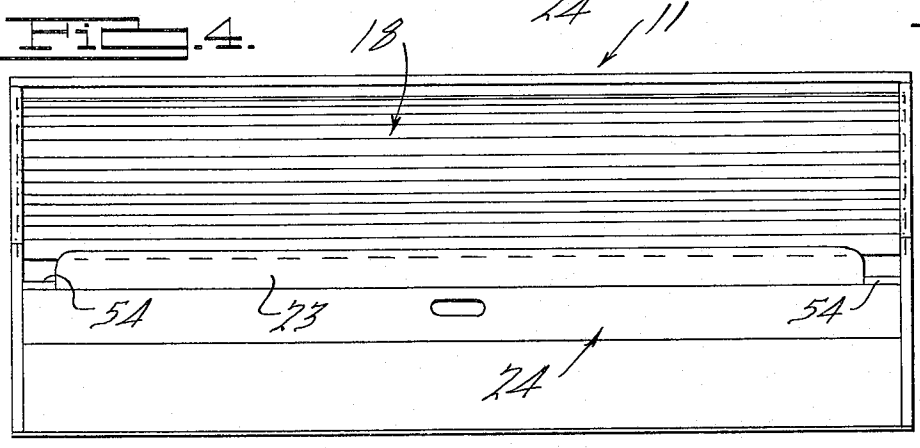


Fig. 4.

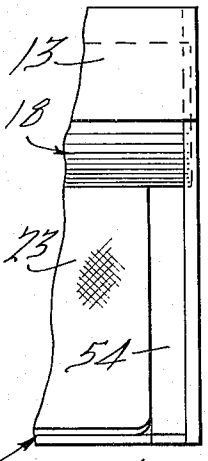


Fig. 5.

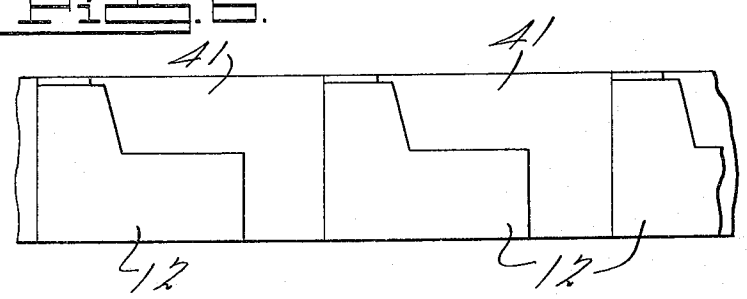


Fig. 6.

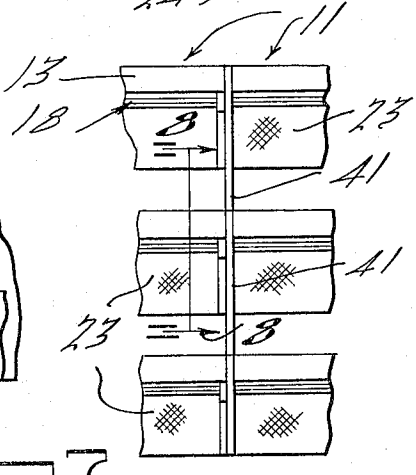


Fig. 7.

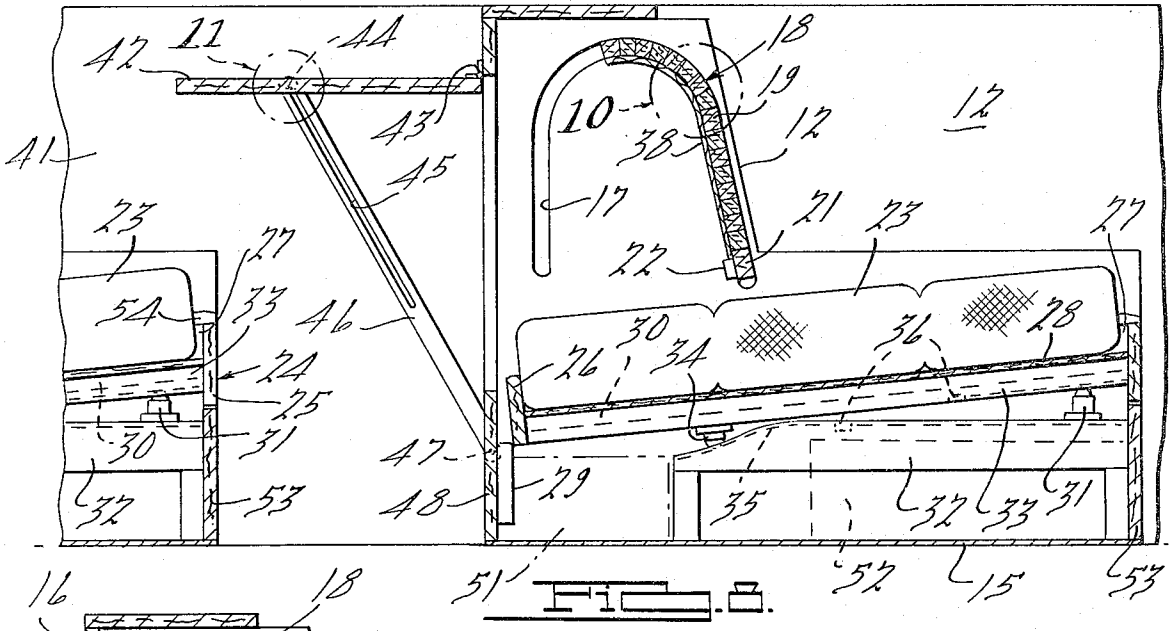


Fig. 8.

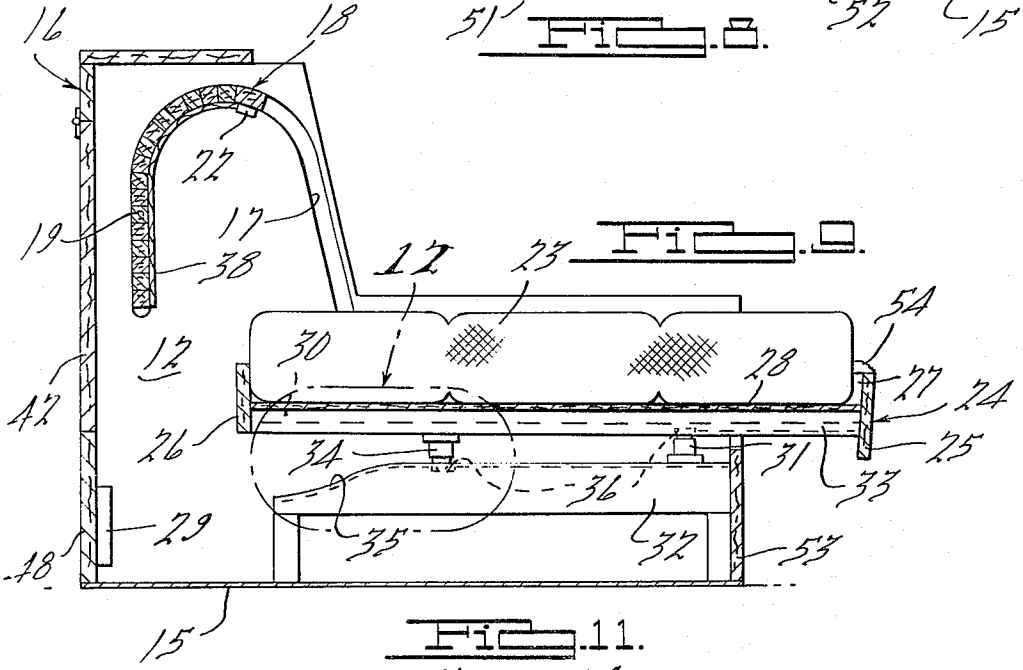


Fig. 11.

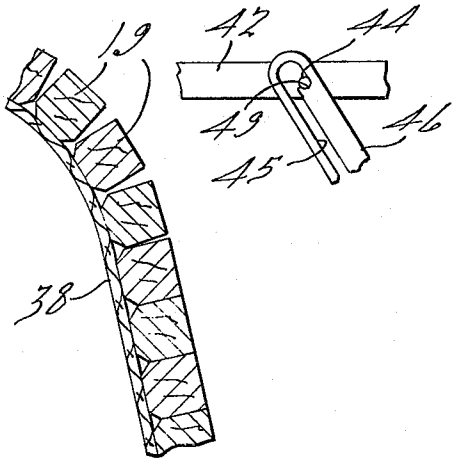


Fig. 10.

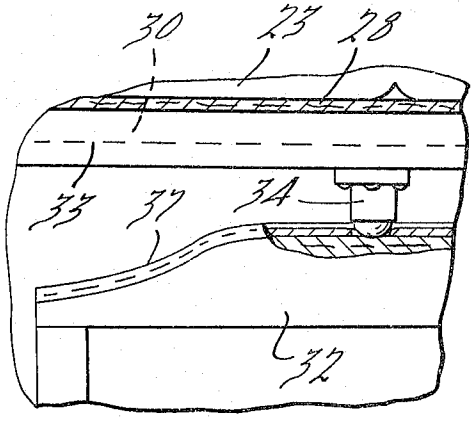


Fig. 12.

INSTITUTIONAL BED

BACKGROUND OF THE INVENTION

Davenport bed units are known in the art which provide a seating and bed area. In the present arrangement the mattress box forms the seating and bed area when disposed angularly and horizontally with a back rest which is movable to stored position.

SUMMARY OF THE INVENTION

The unit of the present invention, which may be employed alone or in groups, has L-shaped side members which are interconnected by panels at the back, top and front to form a rectangular base. A mattress box when moved to the rear is tilted downwardly. The front panel of the box is vertically aligned with the panel which interconnects the bottom front of the side members. Each of the side members has an inverted U-shaped slot in which a rollable panel composed of a plurality of substantially square strips is supported. The strips are connected together in hinged relation by flexible lengths of cloth, plastic or the like which are adherred to the backside thereof. When in supporting position the rollable panel is angularly disposed to the vertical to provide a back rest for the seating area.

When the mattress is to be moved to bed position, the panel is moved in the inverted U-shaped slots to the rear leg thereof out of back supporting position. The mattress box is then pulled forwardly to have a pair of rollers on the rear of the end rails roll up angle portions at the rear of a pair of runners to move the mattress box to a horizontal position where the rollers drop into recesses in the runners. The forward end of the rail is engaged by a similar roller mounted on the forward portion of the runners where the rollers engage recesses in the rails to further lock the mattress box in bed position.

Drawers may be provided at the front and rear at the base of the bed unit or the front of the mattress box may be raised to uncover storage area. A table or desk may be hinged to the top of the back panel which may be raised and locked by an occupant of a unit in the rear thereof for eating or study purposes. The unit may have one side panel thereof rectangular in shape and of sufficient length to span the space between two units when assembled together so that a number of the units may be compactly grouped to provide dining, study and sleeping areas which occupy a minimum space in which to service a large group of people.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a bed unit in seating arrangement embodying features of the present invention;

FIG. **2** is a view of the structure illustrated in FIG. **1**, with the back rest moved to stored position and the mattress box raised to uncover the bottom storage area;

FIG. **3** is a view of the structure illustrated in FIG. **2**, with the mattress box pulled forwardly to horizontal position;

FIG. **4** is a view in front elevation of the bed unit illustrated in FIG. **1**;

FIG. **5** is a broken plan view of the structure illustrated in FIG. **4**;

FIG. **6** is a reduced view in side elevation of a plurality of bed units in compact assembled relation;

FIG. **7** is a broken plan view of the structure illustrated in FIG. **6** showing the compact arrangement of the units;

FIG. **8** is an enlarged broken sectional view of the structure illustrated in FIG. **7**, taken on the line **8—8** thereof, with the mattress box in seating position;

FIG. **9** is a view of the structure illustrated in FIG. **8**, with the mattress box in sleeping position;

FIG. **10** is an enlarged view of the structure illustrated in FIG. **8**, as viewed within the circle **10** thereof;

FIG. **11** is an enlarged view of the structure illustrated in FIG. **8**, as viewed within the circle **11** thereof, and

FIG. **12** is an enlarged modified view of the structure illustrated in FIG. **9**, as viewed within the oval **12** thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The institutional bed **11** is illustrated in FIG. **1** in seating position. The frame for the bed is made of two L-shaped side members **12** joined at the top by the element **13** and across the front by the element **14.** The bottom may be closed by ¼ inch masonite sheet **15** and the back is enclosed by a panel **16.** As illustrated more specifically in FIGS. **8** and **9**, each of the facing surfaces of the side members **12** has an inverted U-shaped slot **17** thereon containing a rollable panel **18.** The panel is made up of a plurality of like slats **19** which have a heavier strip **21** at the bottom which forms the bottom of the back rest when in the forward leg portion of the slot. The ends of the strips may be circular in form so as to readily move within the slots or may have thin cylindrical wood or metal discs secured thereto. A pair of blocks **22** may be secured to the inside of the strip **21** to provide handholds for raising and lowering the back rest.

A mattress **23** is supported upon a supporting box **24** which embodies a rectangular frame having a front panel **25,** a rear panel **26** and side panels **27** which support slats **54** at the ends between which the mattress **23** is confined. A plurality of slats **30** interconnect the front panel **25** and rear panel **26** and support a ¼ inch tempered masonite panel **28** on which the mattress **23** rests. Spaced blocks **29** on the back panel **16** are engaged by the rear panel **26** of the mattress box **23** when it is moved rearwardly to have the box tipped, as illustrated in FIG. **8,** in angular relation to the back rest of slightly more than **90°.** The forward leg of the U-shaped slot **17** slopes from the vertical to provide the necessary tilt to the back rest when in forward position. As illustrated in FIG. **9,** the panel **18** may be moved into the rear section or leg of the slot **17** out of back rest position. The mattress box **24** is pulled forwardly on a pair of front rollers **31** mounted on the pair of spaced runners **32** in the unit. The rollers are disposed in engagement with the rail **33** at each end of the mattress box **24.** A similar pair of rollers **34** are secured to the underface of the rail **33** and disposed in a slot **35** in the upper edge of the runners **32.** One or both of the rollers **31** may drop into recesses **36** in the runners **32** and rails **33** and thereby maintain the mattress box in forward or bed position. A rearward force applied at the front panel **25** of the mattress box will move the rollers from the recesses **36** and permit the box to assume its angular seating position, as illustrated in FIG. **8.** In FIG. **10,** a metal strip **37** is illustrated as being formed into an

arcuate channel and secured on the rear top portion of the runners **32** to prevent undue wear of the grooves when the wood tops of the runners are engaged by the ball elements **34.** A similar metal strip may be employed on the underface of the rails **33** with which the forward ball elements **31** engages. The metal elements have apertures therethrough forming the recesses **36** in which the ball elements may project.

As illustrated in FIG. **9,** the strips **19** are of similar construction and are joined together by wide strips **38** of flexible material such as cloth, plastic and the like disposed inwardly of the edge and at the center to form a unit rollable panel such as that employed as the closure panel of a rolled top desk. The cloth strips **38** are exposed when the back rest is moved to the rear as the rear surface of the strips **19** will be visible from the front of the unit.

One side of the bed unit may have a rectangular panel **41** substituted for the L-shaped side member **12.** When so provided, the side panel **41** spaces the bed units a predetermined distance apart when placed one behind the other, as illustrated in FIG. **6,** and similar units **11** are placed on the opposite sides of the panels **41** to form a cluster of the units which are accessible to an occupant from aisles at the ends of the units (not shown). This provides a degree of privacy for each of the units when the mattress box is in seating or bed position.

A desk or table **42** may be secured by hinges **43** to the back of the bed unit, as illustrated in FIG. **8.** The ends of the panel forming the desk or table have headed studs **44** therein which operate in a slot **45** in metal supporting arms **46** which are secured by a pivot **47** to the bottom panel **48** at or between the ends of the bed units. A notch **49** is provided at the upper end of the slot **45** which receives the stud **44** and retains the desk or table **42** in raised position. It is only necessary to raise the desk or table and push the top end of the supporting arm **46** forwardly to have the stud **44** drop into the slot **45** at one end of the desk or table and by raising the opposite end of the desk or table release the stud thereat so that both ends will no longer be supported by the arms **46** and will drop down and be aligned with the back panel **48.** It will be noted further in FIG. **8** that one or more drawers **51** may be mounted in the panel **48** at the rear of the bed unit and that a deep drawer **52** may be provided in the front panel **53** of the unit which may be pulled out and filled with bed clothes, pillows and the like when the mattress is to be employed as a bed. The unit, as pointed out above, may be used individually but preferably as a cluster, a small group of the units being illustrated in FIGS. **6** and **7.** The cluster can be used as a dining area, as a dormitory, as a lecture area and the like for study, eating and sleeping purposes. The unit is especially adapted for this assembly as it is extremely rugged and contains no fragile parts which could be broken if mistreated. All of the elements of the unit are a permanent part thereof and are not subject to being lost or misplaced. The inclusion of the desk or table panel and the drawers adds substantial utility to each of the units, especially when assembled in a cluster.

I claim:

1. In a utility unit, a rectangular frame having side, front and back elements forming bottom forwardly and rear upwardly extending sections, support means within said forwardly extending section, a mattress box on said support means sloping rearwardly thereon, means provided on said support means for permitting said mattress box to be moved to forward position, and a back rest supported on said rear upwardly extending section above said mattress box in a manner which permits said back rest to be moved to a rear position on said section.

2. In a utility unit as recited in claim **1,** wherein said back rest is made of strips secured in unit relation by one or more flexible elements, and wherein said support embodies inverted U-shaped slots in said upwardly extending sections which face each other.

3. In a utility unit as recited in claim **1,** wherein said forwardly extending section includes horizontal runners sloping downwardly at the rear end, rails on the bottom of said mattress box aligned with said runners, and roller means extending downwardly from the rear portion of said rails in engagement with the top of said runners.

4. In a utility unit as recited in claim **3,** wherein roller means extend upwardly from the forward portion of said runners in engagement with said rails.

5. In a utility unit as recited in claim **1,** wherein one of said side panels is of rectangular shape disposed in aligned relation with rectangular panels on other of said units forwardly and rearwardly thereof for closing off the passageways between rows of units in side by side relationship located on opposite sides of the rectangular panels.

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