March 4, 1969 MINORU IKEDA 3,430,274

BED

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FIG. 1

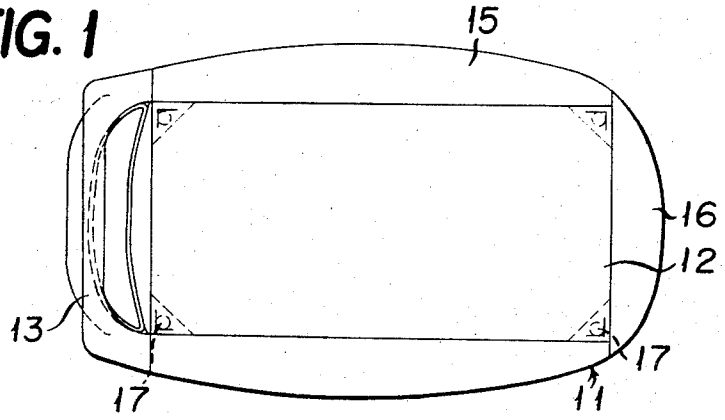


FIG. 2

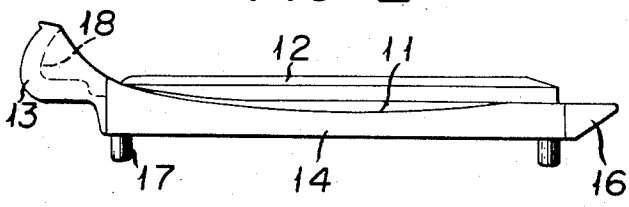


FIG. 3

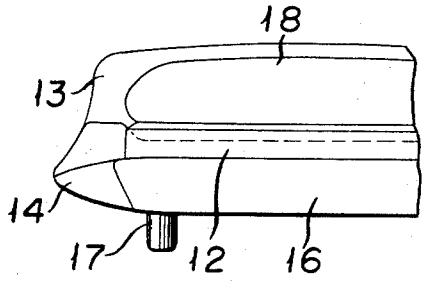
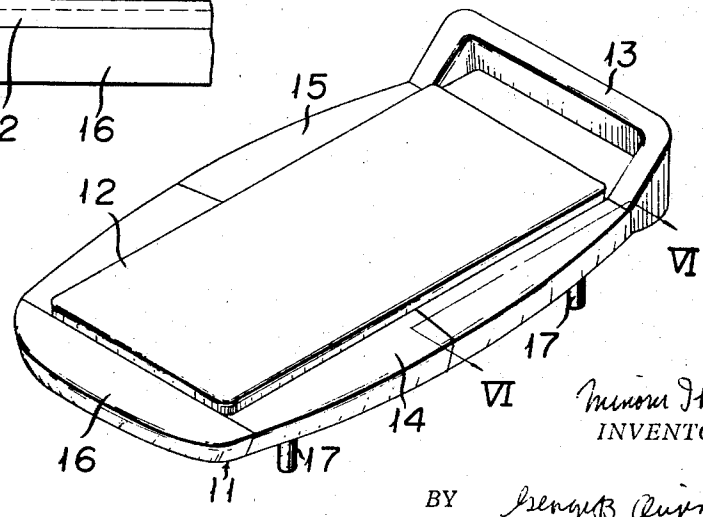


FIG. 4



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FIG. 5

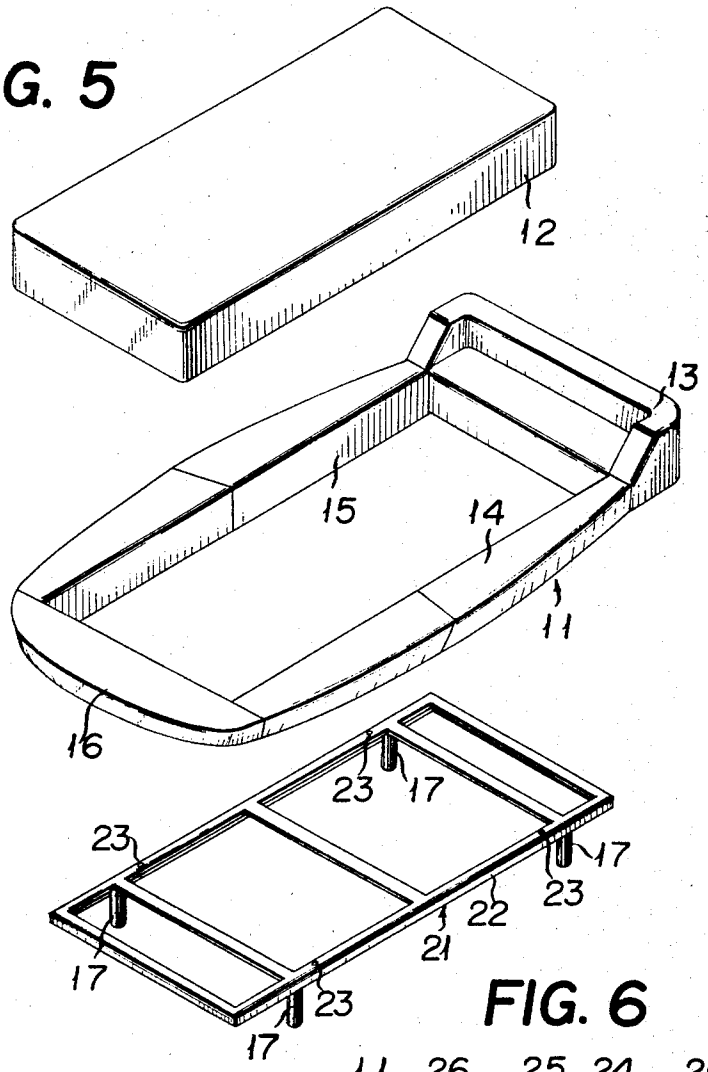


FIG. 6

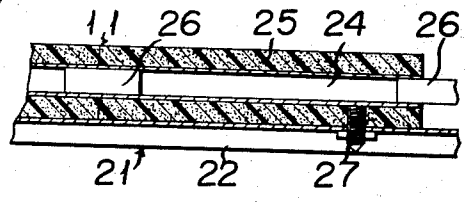
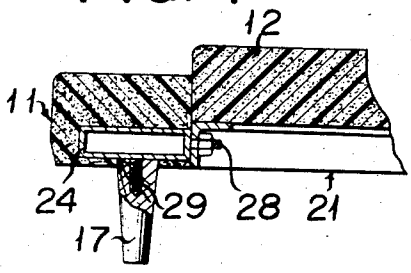


FIG. 7



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3,430,274

BED

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U.S. Cl. 5—181 3 Claims
Int. Cl. A47c 17/86

ABSTRACT OF THE DISCLOSURE

A bed having side boards and a footboard extending outwardly of the mattress to avoid undue heaviness of the bedclothes covered on a person lying thereon an occasional slipping off of the bedclothes from the mattress. These boards can be separable from the mattress and detachable into several parts when it is not used.

Background of the invention

The present invention relates to bed constructions and more particularly to improvements in bed support assemblies to support a bed mattress.

A conventional bed generally comprises a wooden support frame structure to support a mattress, a headboard secured to the support frame and a mattress laid on the support frame. Usually the width of a mattress is substantially equal to or slightly larger than the corresponding dimension of the support frame, so that the side edges of the mattress overhang the frame structure. When a person is to lie down on this type of bed, he first necessarily sits on the bed or directly puts his one leg on the corresponding portion of the bed. Such a posture is very unstable and consequent strong pressure locally applied to the same part of the bed results in early damage and permanent transformation of that part.

The absence of portions of the support frame extending outside the sides of the mattress naturally gives rise to hanging down of corresponding margins of bedclothes such as blankets and coverlets, the width of which is usually greater than the corresponding dimension of the mattress to cause the person lying on the bed to feel heavier these blankets or coverlets. Further, unbalance of hanging portions often causes slipping down of the blankets and the like from the mattress to disadvantage.

A further disadvantage encountered in the conventional bed support assembly comprising a support frame and a headboard is that these parts are secured to each other by means of screw bolts and the like so that assemblage and disassemblage of these parts can not be easily made. Accordingly, transportation and storage of the bed requires a large space and much labor, and bringing it in and taking it out of a room are very troublesome.

Summary

According to the invention there is provided a bed which comprises a mattress, a mattress support framework carrying said mattress and consisting of a headboard, side boards and a footboard, said side boards and footboard extending outwardly of said mattress, and a support frame supporting said mattress support framework.

In the drawings

FIG. 1 is a plan view of one embodiment of the bed according to this invention;

FIG. 2 is a side elevation of the bed shown in FIG. 1;

FIG. 3 is a partial elevational view of the bed shown in FIG. 1 viewed from the foot side thereof;

FIG. 4 is a perspective view of another embodiment of the bed according to the invention;

FIG. 5 is an exploded perspective view illustrating a mattress, a mattress support and a support frame;

FIG. 6 is a section taken along line VI—VI of FIG. 4; and

FIG. 7 is a section illustrating a modification of the mattress support structure according to the invention.

Detailed description

In the drawings the same or similar parts are designated by like reference numerals.

Referring to the drawings, and particularly to FIGS. 1, 2 and 3, there is shown a single bed has a mattress **12** laid on a mattress support framework **11** comprising a headboard **13**, side boards **14** and **15** and a footboard **16**, these boards extending outwardly of the mattress **12**. The mattress **12** is supported as in the usual bed construction in a rectangular recess defined by the surrounding boards of the support frame work. The framework **11** is carried by a support frame having four legs **17** in parallel with the floor. The headboard **13** has an upright portion formed at the side remote from the mattress **12** such that a hollow **18** may be formed. The upper surfaces of the side boards **14** and **15** and footboard **16** are arranged to lie slightly below the upper surface of the mattress **12**. The upper edges of the side boards **14** and **15** are curvedly cut lower at middle portions. The headboard **13**, side boards **14** and **15** and footboard **16** are detachably secured to one another by suitable connecting means.

It is preferred to make these boards from a soft material, for example synthetic resin foam such as polyurethane foam, polyvinyl chloride foam and the like, reinforced by a suitable framework imbedded within the material. Such materials may be readily molded to have a desired configuration and are sufficiently resilient. If desired, the surfaces of the foam may be covered with cloths or synthetic resin sheets to enhance the strength and appearance of the surfaces. Instead of the foam, a synthetic resin such as polyethylene, phenol-formaldehyde resin, urea resin and the like, which are easy to mold may be used depending upon circumstances. Of course, wood may also be used. These materials may be imparted with strength at least sufficient to withstand the weight of the human body by suitable reinforcing means.

As has been previously mentioned, since the edge portions of the bedclothes such as blankets and coverlets are supported on the upper surfaces of the side boards **14** and **15** and footboard **16**, not only unduly heavier weight sensation sensed by the human body due to the hanging down of these edge portions of the bedclothes may be avoided, but also the slipping off of these bedclothes from the mattress may be effectively prevented. Also, the side board **14** and **15** extending from both side of the mattress **12** serves as the steps when one transfers his body from the floor onto the bed, so that local damage to or deformation of the mattress may be prevented.

FIGS. 4, 5 and 6 inclusive illustrate another embodiment of the bed according to the invention. In this embodiment the mattress support framework **11** is supported on the support frame **21**. The support frame **21** comprises a rectangular frame member **22** and four legs **17** attached thereto. The frame member **22** is made of steel and has an L-shape cross section. As is seen from FIG. 5, there are formed four holes **23** in the horizontal portions of the frame member **22**. The mattress support framework **11** is separable in two parts at about the middle of the side boards **14** and **15**. The headboard **13** and the footboard **16** are also separable from the corresponding halves of the side boards **14** and **15**.

The mechanism involved for connecting separate parts constituting the framework **11** is clearly seen from FIG. 6. Each part of the mattress support framework **11** has a reinforcing hollow steel member **24** having a rectangular cross section contiguously surrounded by an outer member **25** made of wood, synthetic resin or synthetic

resin foam. A connecting member **26** is inserted half way into the reinforcing hollow member **24** and secured thereto by suitable means. Each part of the mattress support framework **11** may be connected to the adjacent part by inserting portion of the connecting member **26** extending from the associated reinforcing member **24** into the hollow of the counterpart reinforcing member **24** of the adjacent part to complete the assemblage of the support framework **11**. If it is desired to completely prevent the accidental detachment of the connecting member out of the mate reinforcing member, the telescoped portion of the connecting and reinforcing members may be secured by such auxiliary means as set screws traversing the section of the telescoped portion. The reinforcing member **24** is provided at its lower side with downwardly extending stud bolts **27** at predetermined positions for insertion into holes **23** (FIG. 5) formed in the support frame **21** to secure the mattress support framework **11** to the support frame **21** preferably by fastening nuts **28**.

This embodiment permits easy disassemblage into mattress, mattress support framework and support frame, with mattress support framework being further separated into several parts, for transportation and storage, so that space and costs for spacing and subsequent transportation and storage may be considerably reduced. Conversely, the assemblage of the separated parts can be readily made. When ssembled, this bed also affords mattress protection and comfortability as in the previous embodiment shown in FIGS. 1 to 3.

FIG. 7 illustrates a modification of the mechanism involved in the connection between the support frame and the mattress support framework having reinforcing members **24** and legs **17**. In this variety the mattress support frame work **11** is secured to the side portion of the support frame **21** by means of screw bolts **27** and the legs **17** are secured to the underside of the reinforcing member **24** by means of stud bolts **29**. With this construction the mattress support framework **11** can have a greater strength to withstand the load applied thereon and also can have sufficient lateral dimensions.

It is to be understood that the foregoing description of specific examples of this invention is made by way of example only and is not to be considered as a limitation on its scope.

What is claimed is:

1. A bed comprising, a rectangular box-like mattress, support framework defining a rectangular box-like opening for carrying said mattress so that a portion of the mattress is above of said opening consisting of a U-shaped headboard with a portion extending above said mattress and having a pillow space therein, side boards and a footboard, said side boards and footboards extending outwardly of said mattress, said support framework consisting of separable parts, each of said parts having a reinforcing member imbedded in a synthetic resin foam body, and a support frame supporting said mattress support framework, said mattress support framework being detachably secured to the support frame.

2. A bed according to claim **1** wherein each part of said mattress support framework is connected to the adjacent part by the insertion of an extending portion of a connecting member inserted half way into and secured to the associated reinforcing member into the counterpart hollow of the reinforcing member of said adjacent part.

3. A bed according to claim **2** wherein said mattress support framework is detachably secured to said support frame through the agency of said reinforcing members imbedded in said framework and the legs are attached to said reinforcing members.

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U.S. Cl. X.R.

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