

[54] **DEVICE**  
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                                   **5/348 WB; 287/20.92 D, 20.92 E, 20.92 T,**  
                                   **20.92 Y; 52/650, 665; 128/24**

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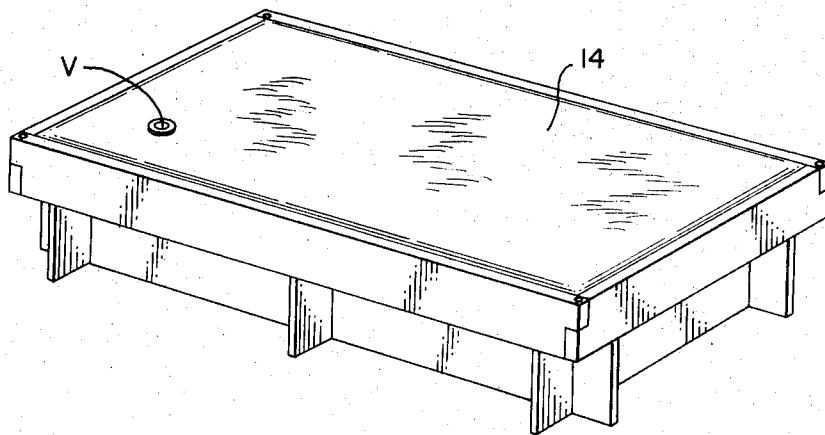
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[57] **ABSTRACT**

This disclosure is directed to a fluid envelope, e.g., water bed, frame comprised of an underlying pedestal assembly, an intermediately located platform upon which the fluid envelope rests and an upper rail section containing a plurality of side rails and end rails secured together at their ends by a plurality of common fastening means. The underlying pedestal section is comprised of two or more notched support members having positioned thereon in mating fashion a plurality of pedestal cross members whose notches fit with the notches provided in the pedestal support members.

**5 Claims, 6 Drawing Figures**



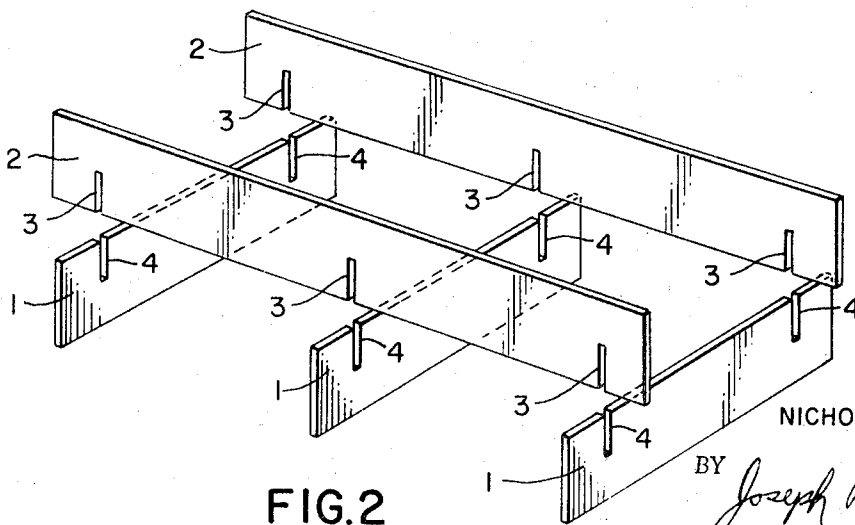
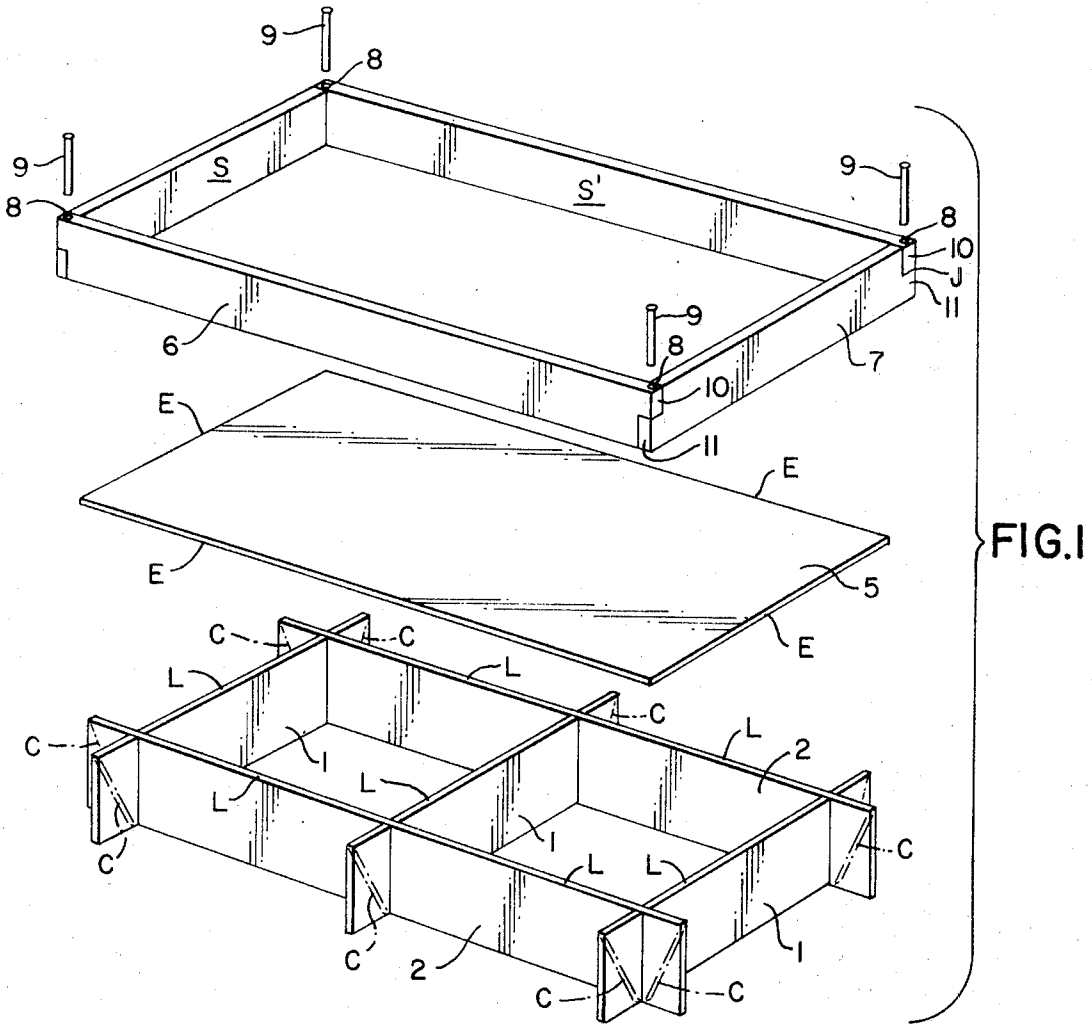
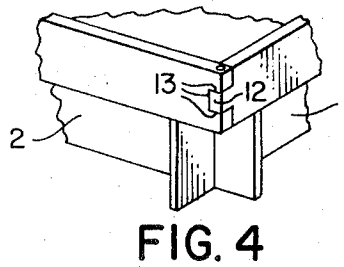
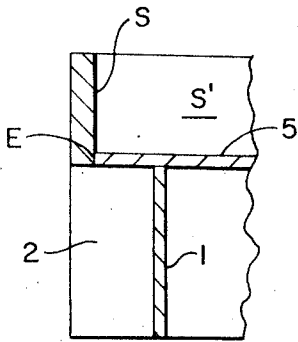
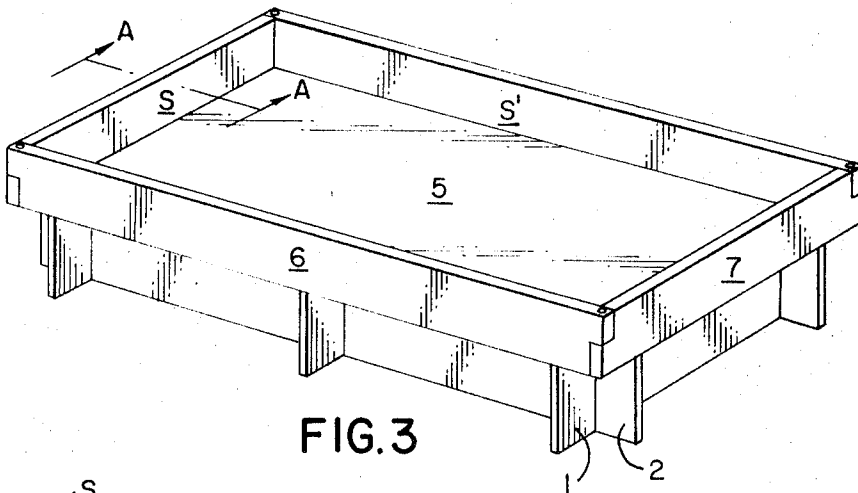
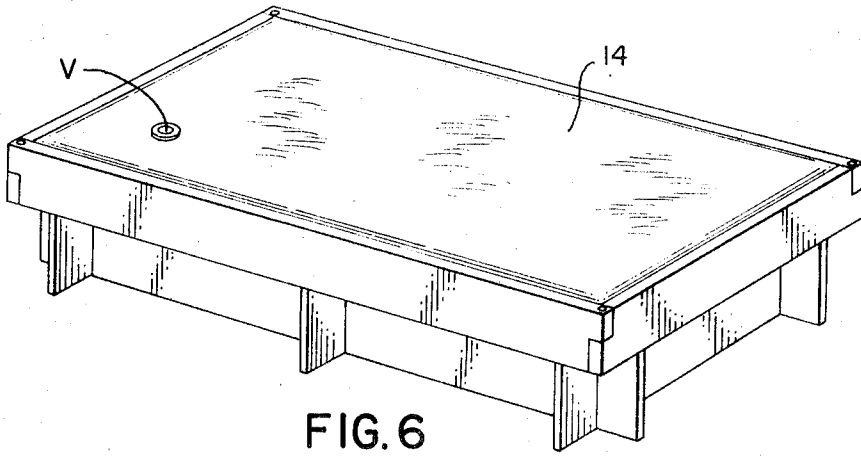


FIG. 2

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## DEVICE

This invention is directed to a provision of an easily assembled fluid envelope supporting, e.g., a water bed, frame which is not only simple in construction, but sturdy and squeak-resistant. Moreover, the construction of this invention permits the parts to be used interchangeably so as to facilitate easy assembly and disassembly thereof by the average person.

FIG. 1 of the drawings is a perspective view showing the positional arrangement of the three major components of the water bed frame, viz., the underlying pedestal assembly, the intermediately located platform and the upper rail assembly, comprised of two or more side rails and end rails fixedly secured to one another.

FIG. 2 is a schematic view showing the manner of positioning the pedestal assembly for a rectangular or square-shaped configuration with the pedestal supports being positioned over and in mating relation with the upper notched portions of the cross members. The alternative notching arrangement (not shown) is to locate the cross members (notched in their lower portion) above the pedestal supports, the latter being notched in their upper portion.

FIG. 3 is a perspective view showing the main components of the fluid bed frame assembled ready to receive the fluid-containing envelope.

FIG. 4 is a perspective view of an alternative corner arrangement to that shown in FIGS. 1, 3 and 6 between end rail and side rail members whereby a tongue and groove joint is provided having increased structural rigidity as compared with the lap or butt joint of the rail assembly of FIGS. 1, 3 and 6.

FIG. 5 is a sectional view taken along the line A—A of FIG. 3 showing the positional relationship occupied by the platform 5, viz., its location inwardly of the inner perimeter, S, S', defined by the end rails and side rails.

FIG. 6 is a composite perspective view of the fluid bed frame and envelope, or capsule, which contains liquid and/or gaseous supporting media.

Referring first to FIG. 2, the pedestal assembly is comprised of a plurality of pedestal supports, (2), and cross members, (1). As shown in FIG. 2, both the pedestal supports and cross members are provided with mating notches (3) and (4), respectively, to accommodate positioning the pedestal supports and the pedestal cross members in fixed relationship. As shown in the lower portion in FIG. 1, the projecting ends of the pedestal support and cross members can be cut, as shown in dotted and dashed lines at regions (C) to permit access to the region beneath the bottom platform, e.g., to avoid stubbing one's toes thereon.

Upon assembling the pedestal section, the platform 5 is properly positioned on top of the supporting ledge surfaces (L), defined by the upper portions of the pedestal supports and pedestal cross members. These upper surfaces (L), are flush with one another to permit even positioning of the platform and the liquid or other fluid-containing envelope.

Positioned on platform (5), is the side rail assembly shown in the upper portion of FIG. 1. This side rail assembly is comprised of a plurality of side rails (6) and end rails (7) each having an access orifice (8) to permit securing the side rail and end rail sections in fairly fixed position, e.g., as by a plurality of common securing means (9), which are shown in FIG. 1 to be drift pins or bolts. As shown in FIG. 1, these securing means, (9), extend through both mating portions of the side rails

and end rails, respectively, at the end junctions thereof, such junctions being in essence lap or butt joints. As shown in FIG. 4, however, the rail assembly can be joined by a tongue and groove joint, which can be pinned or otherwise fixedly secured. The use of drift pins, bolts or other readily removable securing means is preferred in accordance with the invention due to the ease of assembly and disassembly provided by this construction in conjunction with the remaining components of the fluid bed frame. Thus, in FIG. 1, the ends of the side rails and end rails are joined at lap joint (J) which joins portions (10) and (11), respectively. In FIG. 4, the rail assembly is joined by a tongue and groove joint having tongue portion (12) and surfaces (13) defining a groove. The tongue and groove corner joint construction provides more structural rigidity while also permitting interchangeability of the end rail sections and side rail sections, respectively, on either side of the fluid bed frame.

As shown in FIG. 5, the outer peripheral area E of platform (5) is smaller than the inner peripheral area defined by surfaces (S) and (S') of the assembled rail section. Thus, the platform (5) is located interiorly of the inner peripheral area defined by the inner surfaces (S) and (S'), respectively, of the end rails and side rails. This is also evident from FIG. 1 and FIG. 3. As will be noted in FIGS. 1 and 5, the outer peripheral edge as defined by surfaces (E) of platform (5) can be in approximately abutting relationship with the inner peripheral surfaces (S) and (S') of the aforementioned rail assembly. There is usually some space between the outer surface (E) and the inner surfaces (S) and/or (S'). This structural feature of the fluid bed frame of this invention permits the platform (5) to serve not only to support the water or other fluid envelope upon which the person rests, but also to buttress or brace the rail assembly which absorbs the lateral component of any pressure or motion applied to the upper portion of the water bed envelope. This has been observed to substantially reduce or virtually eliminate any squeaking attendant to movement on the water bed.

As will be noted from FIG. 6, the capsule (14) containing the fluid, viz., liquid and/or gaseous material constituting the sleeping or resting medium is placed upon the platform (5) and then filled to the desired extent with the aforementioned supporting medium through a valve (V) located on the upper portion thereof. In placing the plastic or other envelope (14) upon the platform (5) within the inner peripheral area (S, S') of the rail assembly, care is taken to smooth out the ripples in the plastic and to locate it evenly between the inner surfaces of the rail members so that upon inflation, it will be evenly positioned for comfort.

Such water beds or fluid envelopes are usually comprised of a tough, durable plastic material such as; polyethylene, polyvinylchloride, polyurethane, etc. Any material can be used which is substantially impervious to the fluid contained, be it liquid and/or gaseous. Also the envelope material should be inert in respect of the fluid contained. The plastic material is usually sheeted and heat sealed at its edge area peripherally.

The valve assembly can contain (not shown) a threading on its outermost or intermediate portion to permit the delivery end of a hose to be temporarily secured during the filling of the envelope or capsule with water or other liquid and/or gaseous media. Customarily, a one-way flap inner valve portion is located on

the valve (V) to prevent egress of the water or fluid once the envelope has been filled to the extent desired for the degree of comfort or support sought. A closure member is then provided on the outer portion of the valve to seal the valve opening. The valve construction and construction of the fluid-containing envelope or capsule is known in the art and does not, per se, constitute this invention.

A wide variety of materials can be employed to form the end rails and side rails of the upper rail assembly and the same is true of the platform member and the pedestal support and pedestal cross members, respectively. In accordance with one preferred embodiment of this invention, the platform and pedestal support members are formed of: plywood from about one-quarter inch thick to about one inch thick, e.g., about three-quarters of an inch thick. The side and end rail members can be of any wood (depending upon aesthetic taste) and usually from one-half to three inches thick, e.g., about two inches thick. However, other materials can be utilized, including, but not limited to the following: plastic materials, especially those of a structural or supporting nature which can be machined or cast or molded; glass, especially tempered or strengthened glass; composites, e.g., formed of similar and/or dissimilar wood and/or plastic components, e.g., lamina or other materials, including pressed plastic-fibrous materials united under heat and/or pressure, e.g., glass-fiber reinforced plastics, etc. While the joining of the end portions making up the rail assembly has been shown in FIGS. 1, 3, 4 and 6 to be accomplished by the use of drift pins or bolts (9); it will be clear to those persons skilled in the art that other equivalent, alternative means of fastening the end rails and side rails can be employed. Additionally, the configuration of the portions of the pedestal support and cross members extending downwardly and outwardly from the rail assembly can be machined, cut or fashioned, e.g., molded in any desired configuration to accommodate varying aesthetic tastes.

While in accordance with a preferred embodiment with this invention, the plastic envelope (14) as shown in FIG. 6 is filled to a substantial extent with ordinary tap water; the present invention in its combination aspect is not limited to the use of water as a supporting medium. When water is used, of course, a portion of the contents of this supporting envelope, (14), is dissolved and non-dissolved air. Thus, the present combination includes the use of a totally gaseous inert supporting medium, e.g., nitrogen, as well as varying combinations of liquids, both aqueous and non-aqueous, and gases; and it permits the use of a totally gaseous supporting media, a totally liquid supporting media, and supporting media containing varying concentrations of liquid(s) and gas(es). In addition to water, these supporting media can contain bactericides, fungi-

cides, algicides, slimicides, etc. which can be added along with the water to retard or prevent bacterial growth.

The frame device of this invention can be utilized to support fluid-containing envelopes for the purpose of furniture, e.g., couches, chairs, etc.; recreation equipment, e.g., jumping platforms, etc., and it is clearly not limited to the use in sleeping facilities.

While the figures of the drawings illustrate rectangularly shaped frames; this invention clearly contemplates frames of any shape, e.g., circular, square, kidney-shaped, etc. Usually in circular shapes the central pedestal cross member(s) are longer than the outer or end cross members and the rail assembly is cast plastic, formed-wood, etc., with the platform being cut or molded to the desired shape.

What is claimed is:

1. A liquid media-containing bed comprising
  1. a supporting frame having
    - A. a lower pedestal assembly comprised of a plurality of notched pedestal supports in substantially fixed mating relationship with notched cross members to define a plurality of ledge supporting surfaces,
    - B. an upper rail assembly comprised of a plurality of side rails and end rails, each having at the ends thereof an access orifice permitting alignment and joining by a readily removable common securing means, the joined rail sections having an inner peripheral area, and
    - C. an intermediate platform to support said liquid media wherein the lower surface of said platform rests on said supporting ledge surface and wherein the outer peripheral area of said platform is located interiorly of the inner peripheral area of said rail assembly, and
  2. a liquid-containing envelope the bottom portion of which rests on the upper surface of said platform and the outer surfaces of which conform to the inner peripheral surface of said rail assembly and are laterally supported thereby.
2. A liquid bed as in claim 1 wherein said side rails and end rails are joined by drift pins or bolts through said orifices.
3. A liquid bed as in claim 1 wherein said envelope contains water and gas.
4. A liquid bed as in claim 1 wherein the outer peripheral area of said platform is in approximately abutting relationship with the inner peripheral area of said rail assembly.
5. A liquid bed as in claim 4 wherein there is space between at least a portion of the outer peripheral surface of said platform and said inner peripheral surface of said rail assembly.

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