United States Patent

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[54] **EXPANSIBLE MOBILE HOME AND FITTINGS THEREFORE**
4 Claims, 9 Drawing Figs.

[52] **U.S. Cl.** **296/23,** 296/26
[51] **Int. Cl.** **B60p 3/32**
[50] **Field of Search** 296/23, 26

[56] **References Cited**
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ABSTRACT: This invention relates to a mobile or transportable housing unit, having laterally extensible side portions, which portions during transportation are collapsible into the main body of the unit, and which laterally extensible unit is a completely sealed device retractable into the main unit. The extensible portions of the unit further include seating and bedding structures, which are adjustable to accommodate and provide a plurality of positionable elements adaptable for either sitting or sleeping purposes.

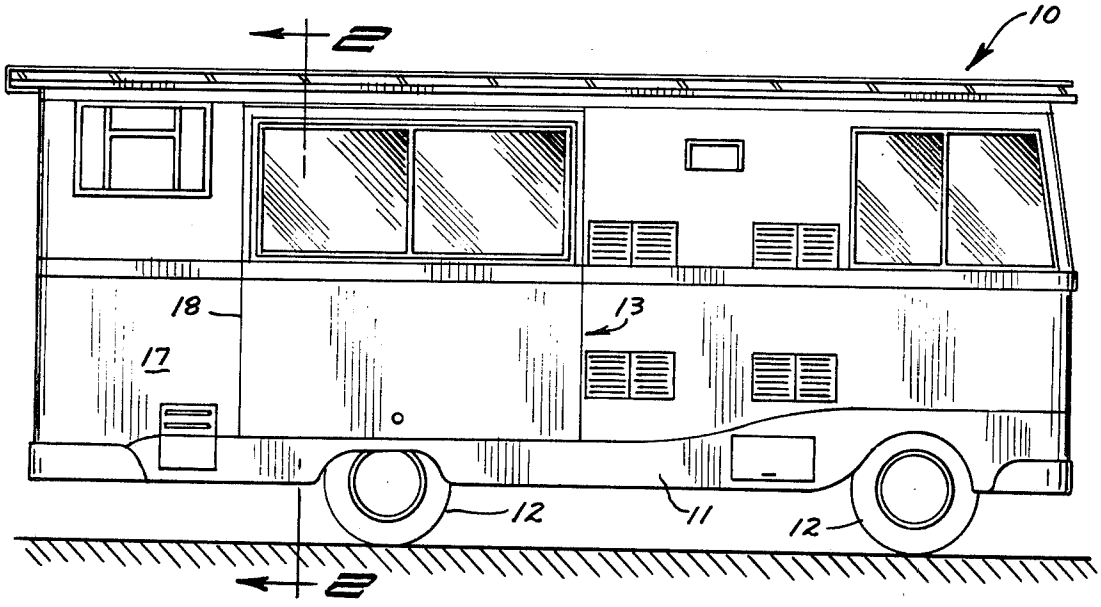
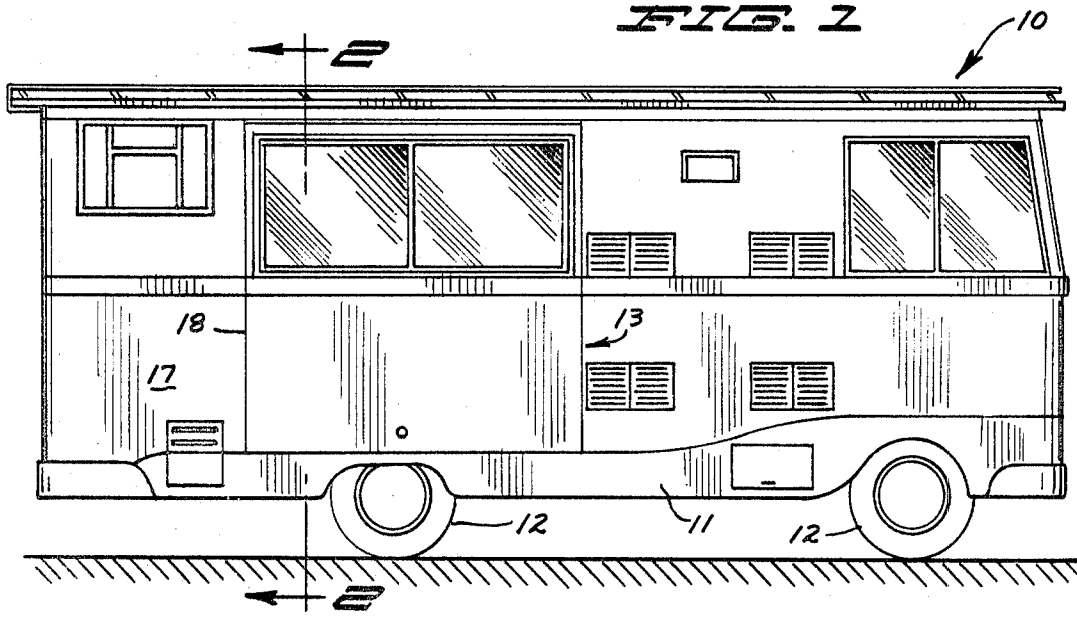


FIG. 1



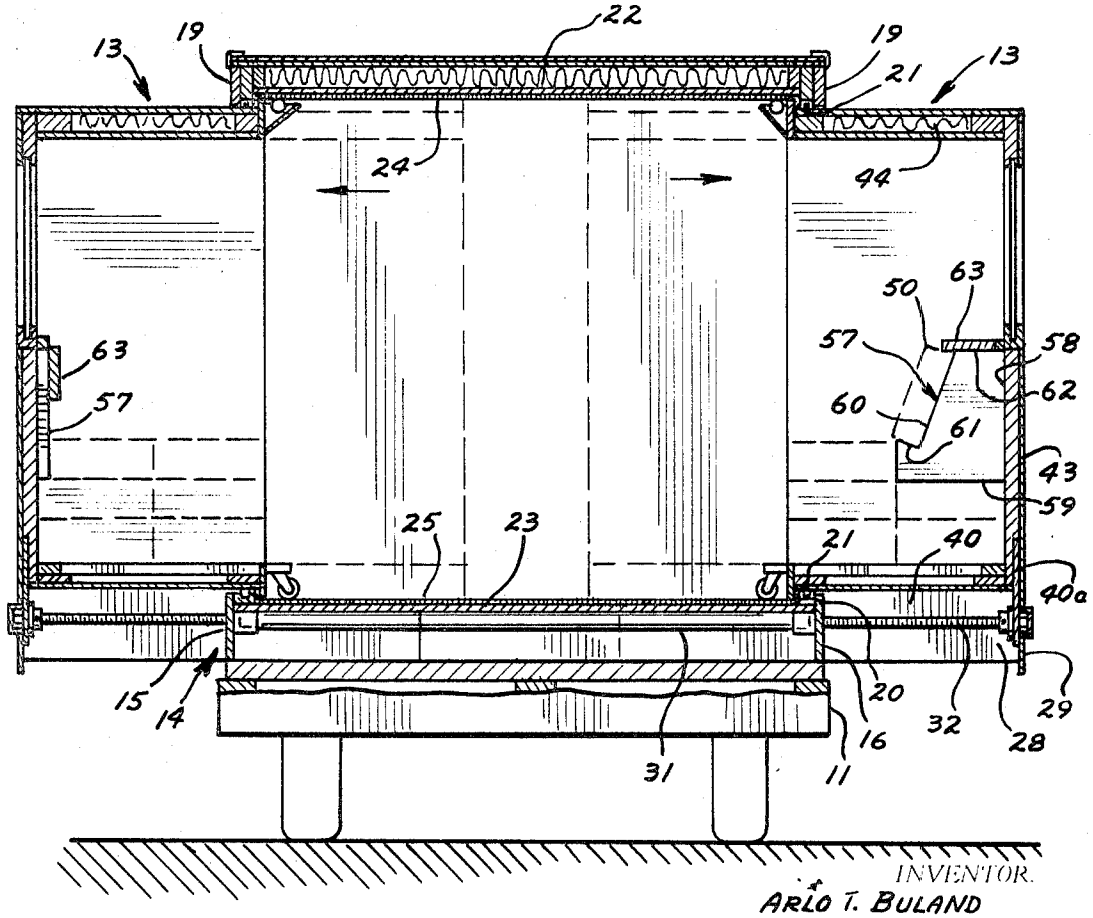


FIG. 2

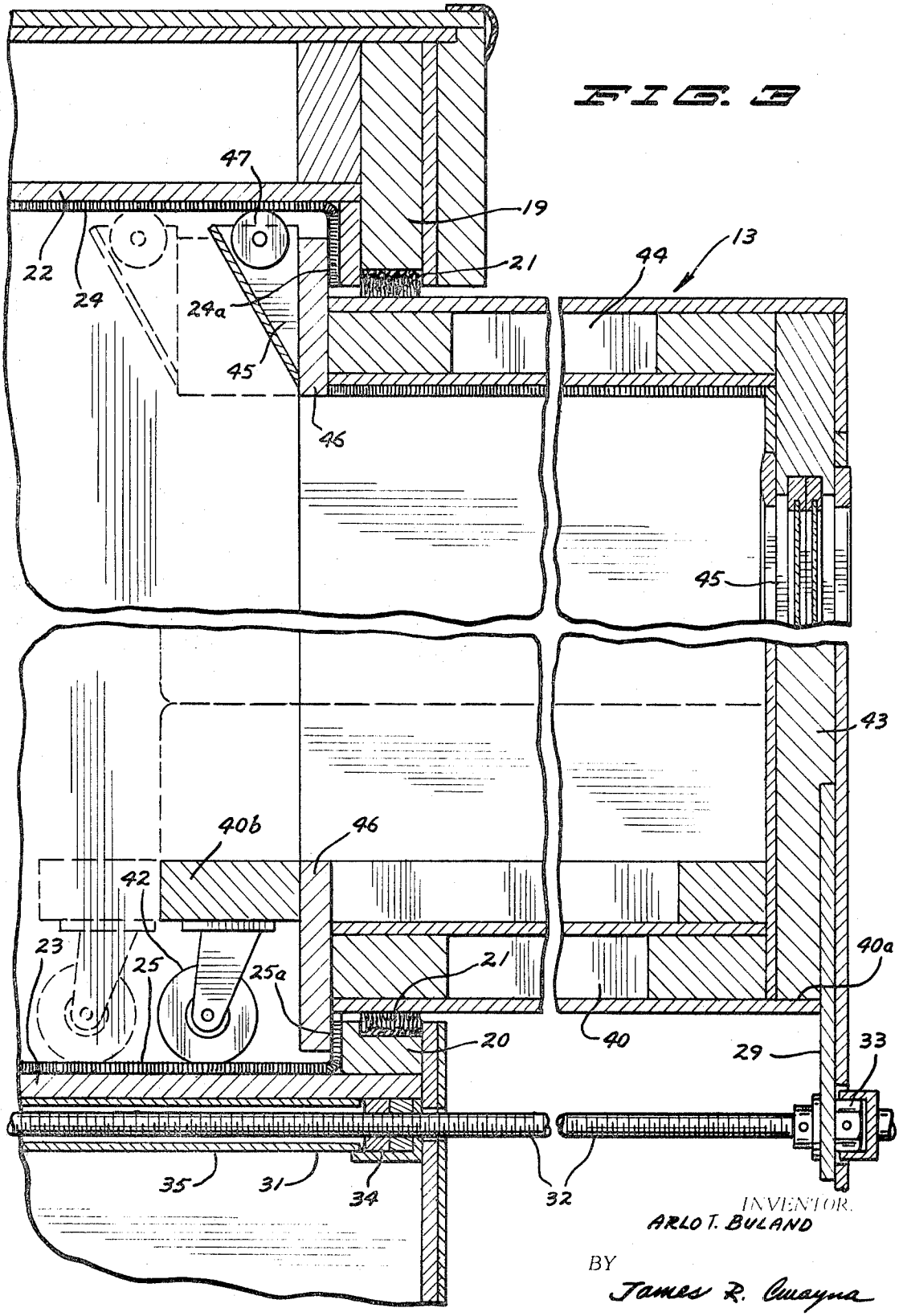
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FIG. 3

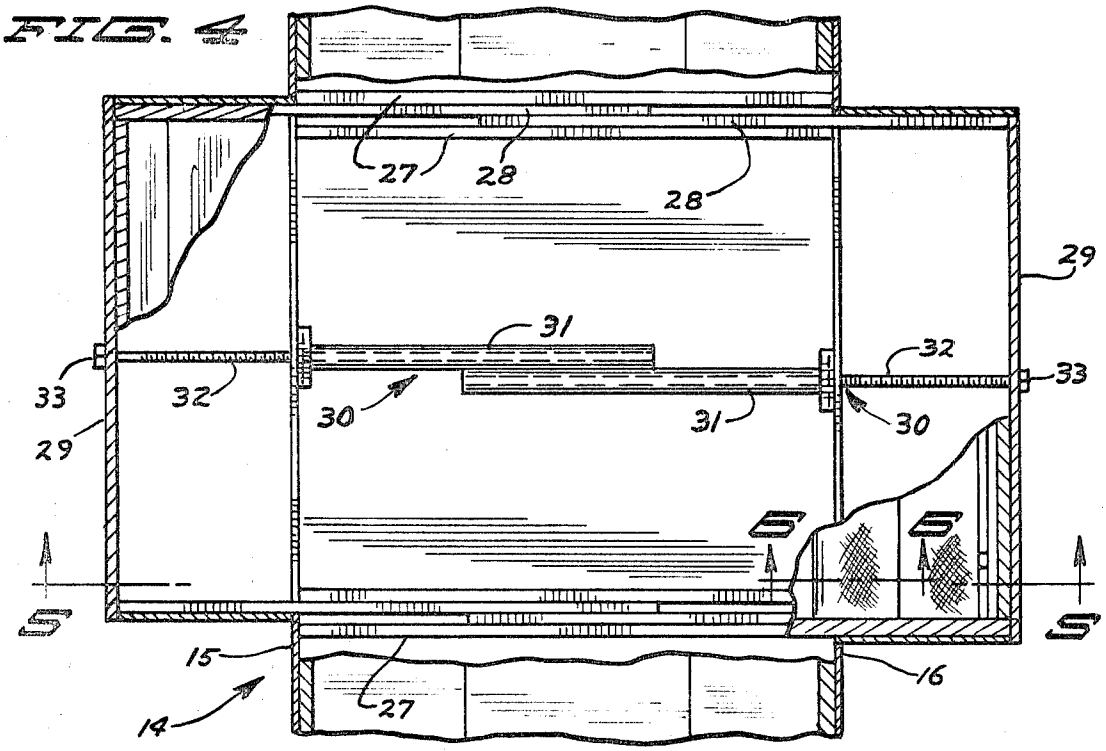


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FIG. 4



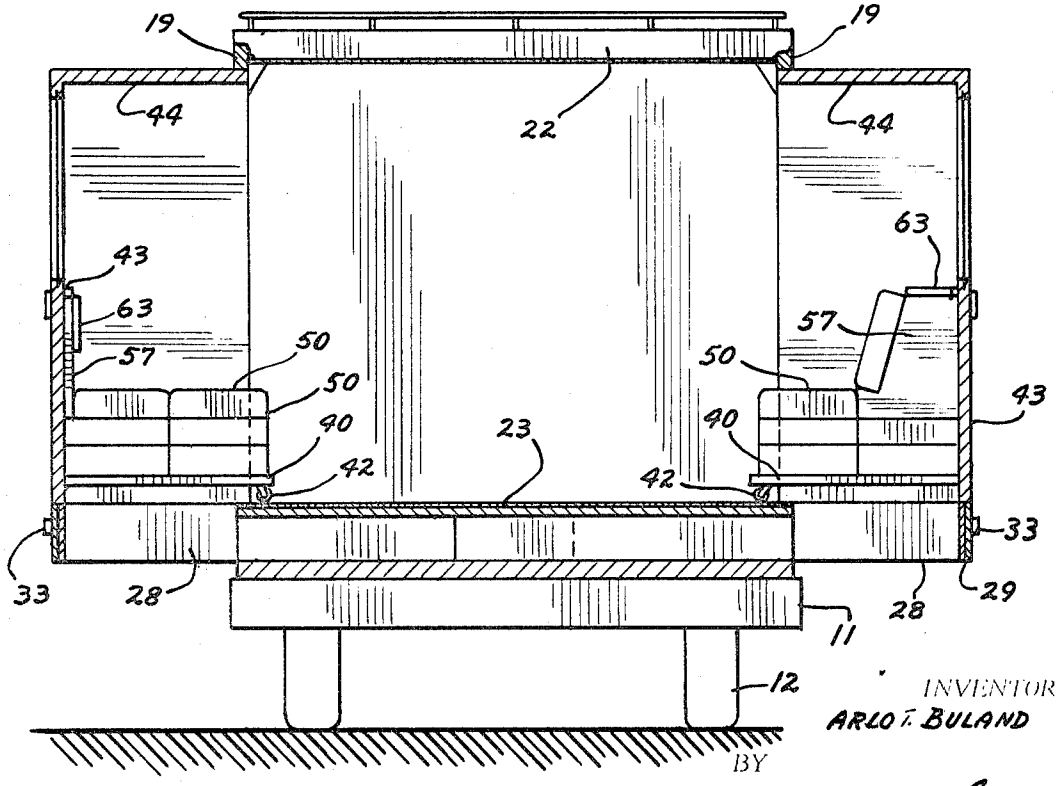


FIG. 5

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FIG. 6

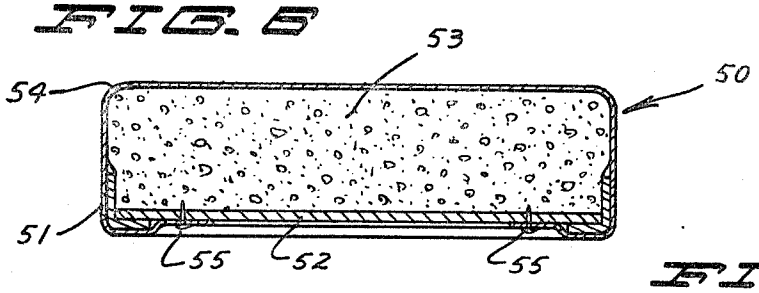


FIG. 7

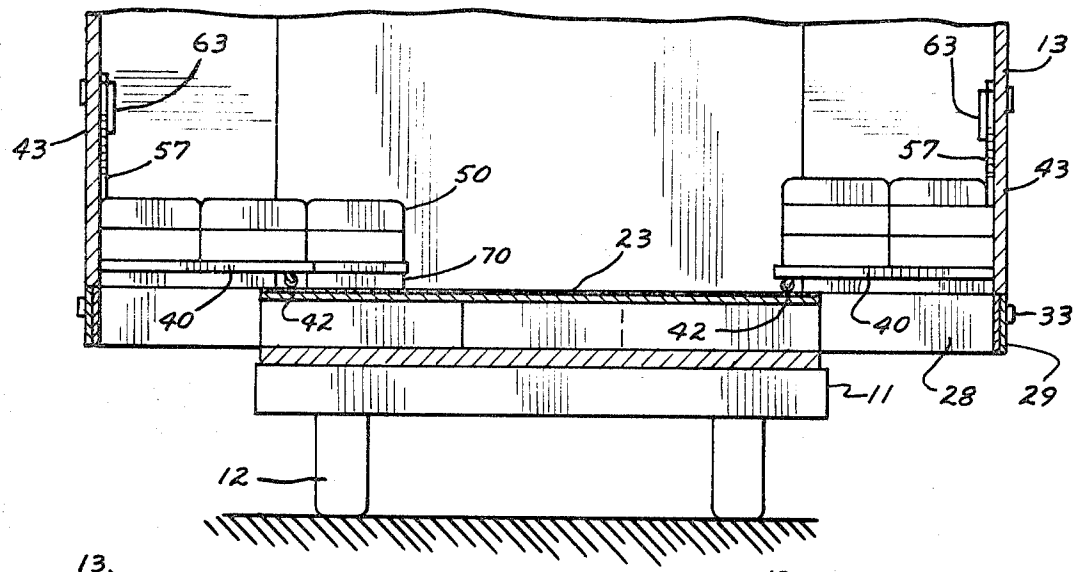
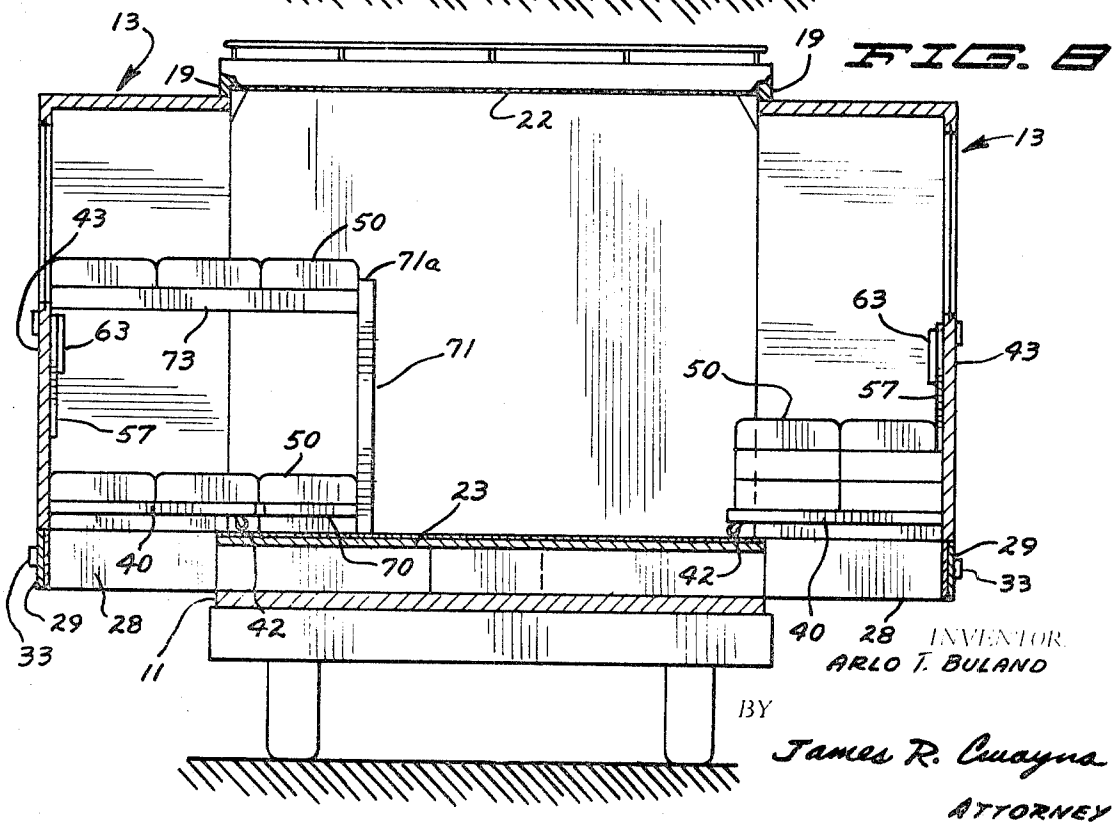


FIG. 8



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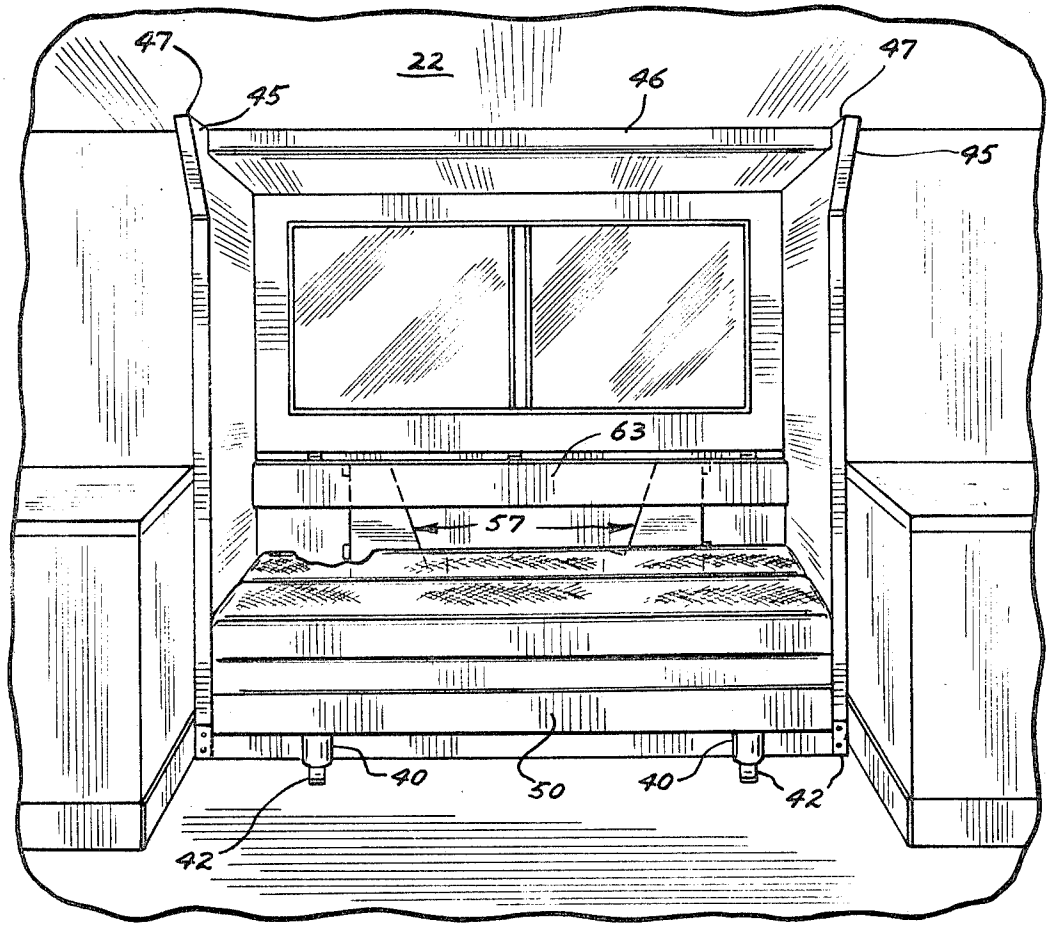


FIG. 9

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EXPANSIBLE MOBILE HOME AND FITTINGS THEREFORE

In the past, various mobile home structures have been provided with compact arrangements therein to facilitate proper housing of the users. One of the basic problems with these units is their size limitation.

Applicant has provided herein a unit which is illustrated as a portion of a self-propelled mobile home, but which obviously may be included in any mobile home structure which unit includes a pair of extensible compartment devices normally arranged for transportation in collapsed position within the main carrier body of the home structure and which are laterally extensible therefrom when the home structure is parked to provide an increased living space area within the mobile home.

In order to accomplish applicant's laterally extensible portion a means must be provided for easily shifting the compartment areas into and out of retracted or collapsed position. Applicant accomplishes this retraction and expansion through a connecting device which moves the expandable unit from the main body. Naturally during this moving and during the expansion situation it is necessary to properly seal the expansive section to the main body unit and applicant accomplishes this through sealing means provided in the main body unit which are designed to seal about the exterior of the expansion section.

It is therefore an object of applicant's invention to provide a mobile home unit or the like having laterally extensible portions thereon which when expanded position will provide an area of increased width within the mobile unit.

It is a further object of appliant's invention to provide a mobile home unit or the like having a laterally extensible compartmented area arranged on at least one side thereof which will, when shifted into extended position provide a unit which is completely sealed about the exterior thereof and with the mating surfaces of the main body of the unit.

It is a further object of the applicant's invention to provide fittings for a mobile home unit or the like which will be adaptable and shiftable to permit shifting and modification of the same from a seating arrangement to a bed arrangement.

It is a further object of the applicant's invention to provide fittings for a mobile home unit which in a first position will provide a seating arrangement and which in another of the variable positions will provide a plurality of bedding positions.

These and other objects and advantages of may invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like references characters refer to the same or similar parts throughout the several views, and in which:

FIG. 1 is a side elevation of a mobile home incorporating the concepts of the applicant's invention;

FIG. 2 is a vertical section taken substantially along line 2–2 of FIG. 1 illustrating the unit in expanded position;

FIG. 3 is a vertical section taken through one of the expanded sections of applicant's expandable compartment;

FIG. 4 is a plan view of the floor section of the unit in expanded position with portions removed to illustrate the substructure thereof;

FIG. 5 is a horizontal section taken substantially along line 5–5 of FIG. 4;

FIG. 6 is a horizontal section taken substantially along line 6–6 of FIG. 4;

FIG. 7 is a view similar to FIG. 5 but illustrating the sleeping accommodations in one particular form;

FIG. 8 is a view similar to FIG. 7 illustrating a second form of the sleeping accommodations; and

FIG. 9 is a perspective view of the expandable portion of the unit in laterally expanded position.

In accordance with the accompanying drawings a mobile home generally designated 10 is illustrated embodying the concepts of the applicant's invention and the mobile home as illustrated includes a self-powered vehicle having a lower frame section 11 supported by ground engaging wheels 12–12. The laterally extending and extendable section provided by applicant is generally designated 13 and as illustrated is arranged intermediate the ends of the vehicle although it should be obvious that the extendable unit could be arranged at any point along the length of the vehicle 10.

The main vehicle 10 is provided with a framework section including a base portion 14 which base includes longitudinally extending stringers 15–15 arranged in parallel relation along the length of the unit and these stringers are provided on the chassis 11 of the unit 10. Upstanding sidewalls 17 extend the length of the unit and normally, as should be well understood, the walls, along with front and rear walls, will provide a complete enclosure for the unit. The expandable device provided by applicant 13 is arranged to be received into an aperture 18 defined in the sidewalls 17 and a framed opening which includes an upper stringer member 19 and proper side supports to thoroughly frame the aperture 18 are provided with a bottom framing member 20 completing the aperture. A seal member 21 to completely circumscribe the passage 18 is provided and this seal is obviously arranged to seal against the exterior surfaces of the extendable portion 13.

In the particular form shown and as best illustrated in FIGS. 2 and 3 the body unit 10 is provided with a top 22 and a base or floor 23. The interior of the unit 10 is lined at the top 22 and the floor 23 with a fibrous material 24 which is particularly illustrated in FIG. 3 extends across the ceiling 22 and floor 23 extends respectively upwardly and downwardly across and about the portions 19—20 which frame the aperture 18. This extension is illustrated as 24*a* and 25*a* respectively. This resilient material may be a carpeting material although it should be obvious that many other suitable fibers would provide this same function.

As previously mentioned the frame structure includes the longitudinal stringers 15—16 and a plurality of transversely arranged joists 27–27 are provided laterally across the frame of the unit for sufficient strength. The base for the extensible members 13 includes laterally extending frame elements 28–28 which are captured for sliding relation between the chassis or lower support frame 11 and the flooring portion 23. These members are tied at their end sections with a longitudinally extending stringer 29 and a positioning device such as a telescoping screw section 30 is provided with a first stationary portion 31 and a threaded extendable portion 32 which engages the longitudinal stringer 29 with means on the outer end 33 thereof to afford the attachment of a lever or crank thereto. It should be obvious that many means may be provided to attain the rotation of the threaded element 32 such as a power driven drill or a simple bell crank device which is manually operated. All of the positioning power for the extensions 13 then is located in the lower most section of the extensible portion 13 and as particularly illustrated in FIG. 3 the stationary telescoping portion 31 may include a threaded portion 34 with the remainder thereof 35 being a simple housing tube to properly retain the threaded element 32 therein when the same is inserted through the threaded portion 34. The means for shifting this device naturally may take many forms and applicant has illustrated the form which he has found to be most successful in properly and simply shifting the unit 13 into the laterally extended position.

The unit 13 includes a base section 40 having one end thereof 40*a* secured to the longitudinally extending stringer 29 with the other end thereof mounted upon a floor engaging wheel 42 such that as the section 13 is moved inwardly and outwardly a first point of contact will be provided interiorly of the unit 10 through the floor wheel 42. Unit 13 is provided with upstanding sidewalls 43 and a top portion 44. Naturally windows or the like 45 may be provided through any of the sidewalls as desired. A second point of contact is provided against the ceiling 22 and this point of contact is provided through a support strut 45 engaging the inner end of the top supporting beam 44 with a ceiling contacting wheel 47 pivotally mounted thereon to engage with the ceiling 22 and more particularly to ride against the aforementioned fibrous surface 24 covering the ceiling 22.

In order to provide efficient and effective sealing an inner supporting and framing plate 46 is provided against the interior ends of he base 40 and upper supporting portion 44 of the unit 13 and in the form shown the width of this particular plate 46 is determined such that when the unit 13 is in its extended most position the plate 46 will abut the fibrous formed portions 24*a*—25*a* on the ceiling and floor and sides respectively. In this manner then two seals consisting of the seal 21 extending around the aperture 18 and the seal between the plate 46 and the fibrous surfaces 24*a*—25*a* will sufficiently and effectively seal the unit against the flow of air when it is in the extended position and the single seal 21 about the aperture 18 will seal the same when the unit 13 is in collapsed or interior position. The possible positions are illustrated in dotted lines in FIG. 2 to show that when the units 13 are in the collapsed or innner position a relatively narrow passageway is provided therebetween but when the units 13 are in the extended position a relatively large living area is provided.

It should be obvious that the entire framing structure to properly enclose the extendable portion 13 may take many different forms with the understanding that the concept is to provide a completely enclosed and expandable unit.

In operation of this extendable portion 13 it should be obvious that it is only necessary to provide rotative power to the threaded member 32 to draw the same outwardly which will serve to drive the enclosed unit 13 away from the interior or collapsed position into position where the plate members 46 are stopped against the fibrous seals 24*a*—25*a*. The two wheel members being the floor engaging wheel 42 and the ceiling engaging wheel 47 will provide an effective holding force to maintain the unit 13 in proper position within the aperture such that no tipping or the like will normally occur. Obviously the laterally extending supporting frame 28 captured between the lower chassis portion and the floor portion 23 will also assist in proper horizontal aligned movement of the extendable unit.

The fittings for the expandable compartment to afford a plurality of sealing or bedding arrangements include devices to shift or permit shifting of the unit from a seating arrangement to a bedding arrangement through various positioning devices. As illustrated in FIG. 5 a comparison of a seating arrangement and a bedding arrangement is illustrated wherein the base 40 to which the forwardmost wheel 42 is mounted affords the vertical support for either the bedding or seating arrangement with a plurality of cushions 50 arranged thereon.

Each of the cushions 50 includes a framework consisting of angle formed members 51 arranged in a rectangular configuration providing an open center area which center is provided in the form shown with a closure panel 52 upon which the resilient cushioning section 53 is carried. As illustrated in FIG. 6 the cushioning section 53 is carried. As illustrated in FIG. 6 the cushioning section 53 is at least partially retained by the angled portions 51 which circumscribe the cushioning area 53 and a cover material 54 is provided completely thereover and is attached to the panel member 52 through fastening devices 55 such as nails or the like. This entire unit then provides an upholstered cushion for the user.

In order to provide the seating arrangement a pair of cushion support members 57 are hingedly attached to the sidewall 43 through hinge devices 58 and each of the supporting members includes a generally horizontally arranged base portion 59 having a front surface extending vertically upward therefrom a short distance and including a cushion retaining insert and support section 61 extending upwardly rearwardly to a top portion 62. This front surface then as illustrated in FIG. 2 is designed to receive a cushion 50 therein and support the same in slightly rearwardly tilted fashion. A top panel member 63 is hingedly attached to the wall 43 and provides a shelf as well as a closure to cover the open space behind the cushion 50. A comparison of the two sides of FIG. 2 illustrates the same cushion support devices 57 and the top shelf portion 63 in open and folded position. In this manner then a plurality of cushions 50 are provided and it is a relatively simple job to shift the unit from a seating to a bed position. In the form illustrated in FIGS. 2 and 5 and the right-hand portions of FIGS. 7 and 8 a most commonly used bedding system is provided wherein pairs of cushions 50 are provided to afford two bedding areas respectively on either side of the unit 10.

A second form of the bed rest invention is illustrated in FIG. 7 wherein a supporting device 70 is provided and this support 70 is of the same vertical dimension as the lower support beam 40 mounting the support wheel 42. This support member 70 is of a width to support the cushions 50 thereon and as illustrated by shifting two of the cushions onto the support member 70 a wider bedding arrangement is provided. This support member 70, due to the construction of the cushion 50, may obviously consist of a pair of spaced support members similar to the pair of spaced wheel support beams 40 as illustrated in FIG. 9. Obviously means for tying the support member 70 to the support member 40 may be provided.

A third form of the invention is illustrated in FIG. 8 wherein a bunk bed arrangement is provided and again as illustrated a front support member 70 is arranged adjacent the support members 40 of the lower unit and a pair of vertical support devices 71 are attached thereto to prevent lateral movement thereof and to properly support an upper beam member 73 which beam member extends from the sidewall 43 of the unit. This beam 73 is removably fastened to the sidewall 43 with means for attaching the beam 73 to the uppermost portion of the support strut 71. Obviously quick connect devices may be utilized to facilitate attachment of the beam 73 to both the wall 43 and the support strut 71 and it should be noted that the upper end 71*a* of the support strut normally will extend slightly higher than the top of the supporting beam 73 to hold the cushions 50 thereon against lateral movement. Obviously this or any of the other particular bedding arrangements may be provided on both sides of the unit in each of the expanded portions 13 but the illustrations utilized in FIGS. 7 and 8 show the flexibility of the arrangement in that it is not necessary to duplicate the sleeping accommodations on both sides of the unit.

By providing a plurality of cushions in the first stored seating position a great degree of flexibility of the arrangement is allowed in the final utilization and arrangement of these cushions. The supporting struts 70, 71 and 73 are easily stored in the unit in that they are simple beam devices and shiftability of the unit from a couch arrangement to a sleeping arrangement is easily obtained with the hinged cushion support and shelf sections.

It should be obvious that applicant has provided a unique expandable mobile home section which includes not only the necessary expansion means but also provides unique fittings therefore to provide sitting and sleeping accommodations. It has been found that homes of this type are in stationary locations the greater percentage of time and therefore the room provided through applicant's device is very important and desirable.

It should be obvious that though the terminology "mobile" has been used in this specification that units designed for either self-propulsion or auxiliary propulsion are included therein.

I claim:

1. An improvement in mobile homes or the like which home includes a walled unit, a support base and a top, the improvement including:

a. an aperture defined in at least one sidewall of the home, said aperture extending substantially the height of said wall and having a predetermined width;

b. a housing having a base, a top, an exterior side and two ends received in laterally sliding relation into said aperture;

c. seal means sealing said housing within said apertures permitting movement therebetween;

d. said housing having (floor and ceiling contacting devices) wheel members rotatably mounted on the inner ends of the top and base to respectively contact the ceiling and

floor of the mobile home to partially support said housing; and

e. means for shifting said housing laterally from said sidewall to extended position.

2. The structure set forth in claim 1 and said shifting means including:

a. a rotatable laterally directed threaded member carried by laterally housing;

b. a stationary threaded member carried on said base of said home; and

c. means for rotating said threaded member whereby a and: directed force is applied to said housing to shift the same laterally outwardly.

3. The structure set forth in claim 1 and:

a. a resilient sealing surface provided on the top and the support base of said home and extending to close adjacent relation to said aperture; and

b. said housing having portions thereon to engage with and seal against said surfaces when in extended position.

4. The structure set forth in claim 1 and housing apertures defined on opposite sides of said mobile home and extendable housings arranged in each of said apertures.