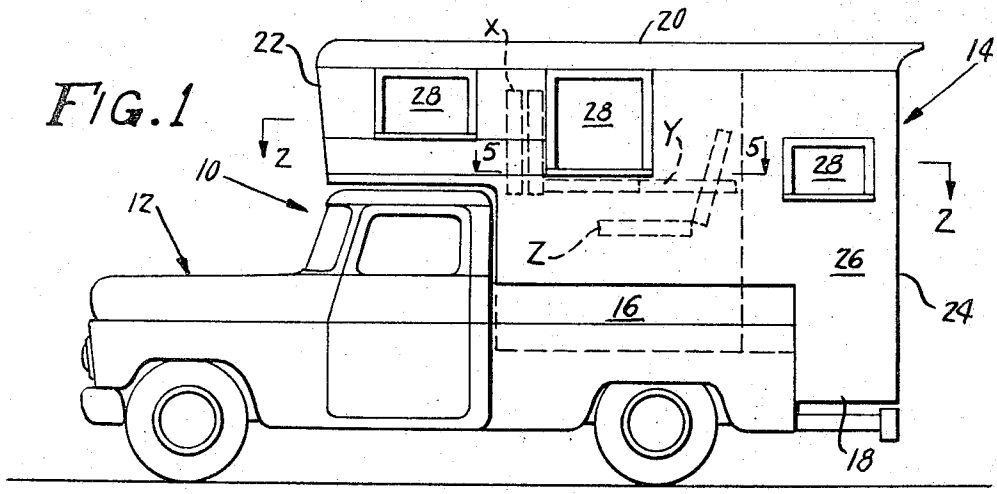
April 11, 1967 G. M. HAGSTROM 3,312,984

FOLDING COUCH BED ARRANGEMENT

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FIG. 1



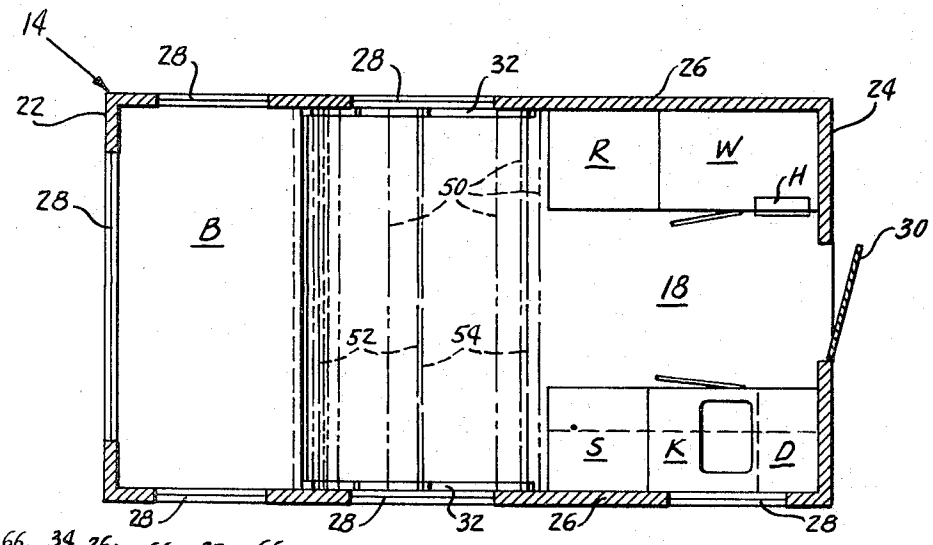


FIG. 2

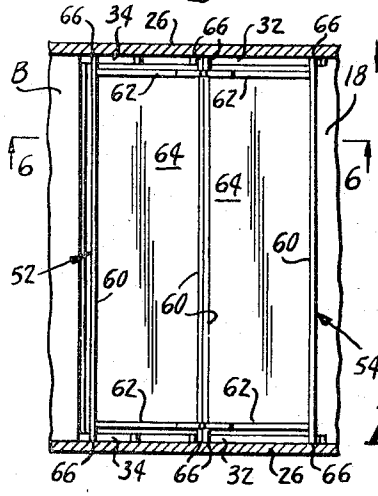


FIG. 5

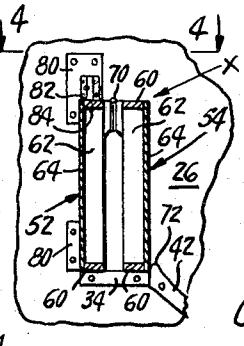


FIG. 3

INVENTOR.
GORDON M. HAGSTROM

BY

ATTORNEY.

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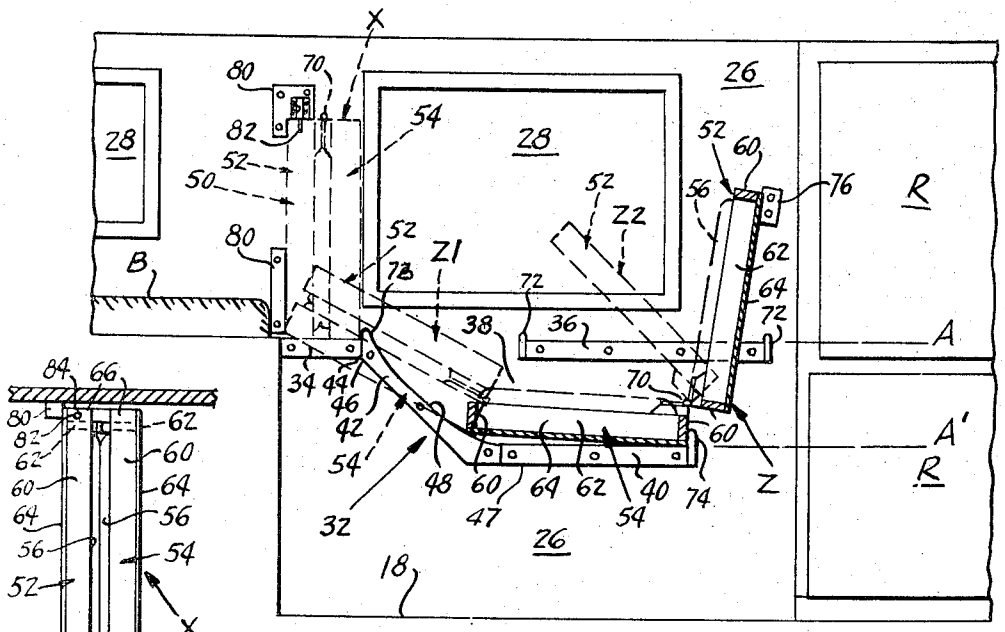


FIG. 8

FIG. 4

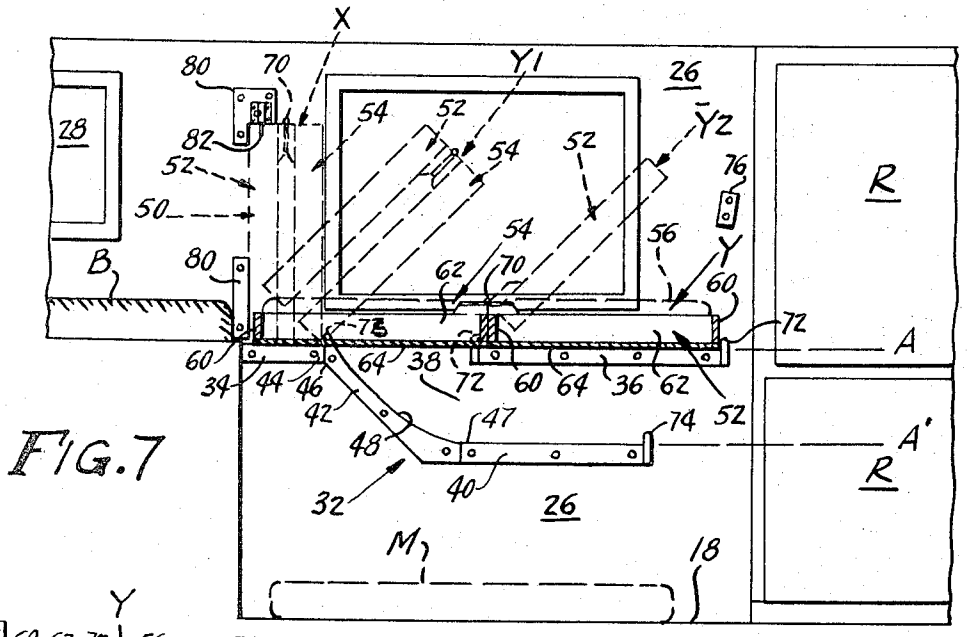


FIG. 7

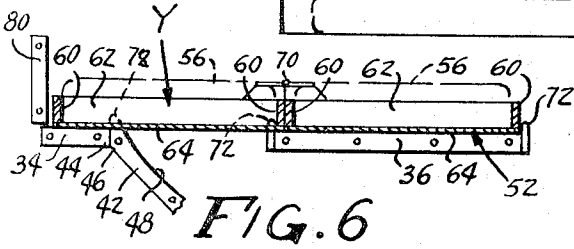


FIG. 6

INVENTOR.
GORDON M. HAGSTROM

BY Robert Ned Holley

ATTORNEY.

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3,312,984

FOLDING COUCH BED ARRANGEMENT

Gordon M. Hagstrom, Rte. 1, Box 324, Hurley, Wis. 54534

Filed Jan. 28, 1966, Ser. No. 523,601
20 Claims. (Cl. 5—12)

This invention relates to an improved bed-bunk and lounge-sofa arrangement together with support structure therefor, and more particularly to such an arrangement when used in confined quarters having limited floor area or space.

It is an object of this invention to provide an improved bed-bunk and lounge-sofa arrangement for use in confined quarters wherein the arrangement may be readily moved between a plurality of positions for the storage thereof and for use as a bed-bunk or lounge-sofa.

It is another object of this invention to provide improved support structure for supporting a bed-bunk and lounge-sofa arrangement for movement between a plurality of positions wherein such arrangement may be stored or used as a bed-bunk or lounge-sofa.

An additional object of this invention is to provide improved support structure for supporting a bed-bunk and lounge-sofa arrangement which may be moved between storage, bed-bunk and lounge-sofa positions wherein the support structure is provided with suitable means which cooperates with portions of the arrangement to maintain and secure the arrangement in the selected position.

Other objects and important features of this invention will be apparent from the study of the following specification which when taken with the drawing show, illustrate, describe and disclose a preferred embodiment of the invention in what is now considered to be the best mode of practicing the principles thereof. Still other or additional embodiments or modifications may be suggested to those having the benefit of the teaching herein, and such other and additional embodiments or modifications are intended to be reserved especially as they fall within the scope and spirit of the subjoined claims.

In the drawing:

FIGURE 1 is a side elevational view of living quarters illustrated in the form of a pick-up camper wherein an improved bed-bunk and lounge-sofa arrangement is illustrated in dotted lines as being disposed in a plurality of selected and desired positions,

FIGURE 2 is a plan view taken along the line 2—2 of FIGURE 1 looking in the direction of the arrows and showing one possible arrangement of various fixtures in the pick-up camper,

FIGURE 3 is a side elevational view in section of the bed-bunk and lounge-sofa when disposed in a storage position,

FIGURE 4 is a partial plan view of the bed-bunk and lounge-sofa arrangement taken along the line 4—4 of FIGURE 3 and looking in the direction of the arrows,

FIGURE 5 is a plan view of the bed-bunk or lounge-sofa arrangement when disposed in a bed-bunk position and is taken along the line 5—5 of FIGURE 1 looking in the direction of the arrows,

FIGURE 6 is a side elevational sectional view taken along the line 6—6 of FIGURE 5 looking in the direction of the arrows and more clearly showing the bed-bunk and lounge-sofa arrangement being supported by support structure when disposed in the bed-bunk position,

FIGURE 7 is a partial, enlarged sectional side elevational view of the living quarters of FIGURE 1 taken along the line 2—2 looking in the direction of the arrows and more clearly illustrating the movement of the bed-bunk and lounge-sofa arrangement from the storage position to the bed-bunk position, and

FIGURE 8 is a side elevational partially sectioned enlarged view similar to FIGURE 7 of the living quarters illustrating the movement of the bed-bunk and lounge-sofa arrangement from the storage to a lounge-sofa position.

Attention is now directed to FIGURE 1 of the drawing wherein there is illustrated living quarters 10 which provide a relatively compact, confined and limited floor area or living space for a user and as shown, the living quarters 10 may be of the pick-up type camper which comprises a vehicle 12 and a camper 14 supported on the body portion 16 of the vehicle 12.

It is to be understood that the inventive concept of the subject application may be employed with other living quarters 10 than that as illustrated and shown in the drawing, for example trailer vehicles such as campers, house or travel as well as permanent installations other than the mobile or vehicle type.

As illustrated, the camper 14 of the living quarters 10 is defined by a generally horizontally disposed floor 18, a roof 20, generally vertically extending front 22, rear 24 and side wall portions 26 having suitable window openings 28 therein and an access door 30 therethrough.

As shown in FIGURE 2 of the drawing, the living quarters 10 may be provided with various fixtures such as a bunk B, a refrigerator R, a wardrobe W, a heater H, a stove S, a sink K, and a set of drawers D. The arrangement of the fixtures as shown in FIGURE 2 of the drawing is for the purpose of illustration and it is to be understood that other arrangements of the fixtures as well as other fixtures than those which have been shown may be employed in the living quarters 10 as desired.

A guide-support structure 32 is disposed or secured on the side wall portions 26—26 of the living quarters 10 in substantially vertical and longitudinal alignment relative to each other and, as more clearly illustrated in FIGURES 7 and 8 of the drawing the guide-support structure 32 comprises a series of plurality of elongate relatively flat parts having a first part 34 and a second part 36 defining a bed or bunk rails which are secured to the respective side wall portions 26 in spaced relationship to each other to define a gap or opening 38 therebetween with the first 34 and the second 36 parts of the guide-support structure 32 being disposed in a common generally horizontally extending first plane A—A.

The guide-support structure 32 further comprises a third part 40 which defines lounge or sofa rails that are secured to the respective side wall portions 26 of the living quarters 10 in subjacent relationship to the first 34 and the second 36 parts of the guide-support structure 32 in a second plane A'—A' that is substantially in parallel relationship relative to the first plane A—A.

A fourth part 42 is provided for connecting an end portion 44 of the first part 34 to an end portion 47 of the third part 40 to define a continuous supporting surface from the first part 34 to the third part 40 of the guide-support structure 32.

While the upper portions of the first 34, the second 36 and the third 40 parts of the guide-support structure 32 are substantialy flat and smooth, it is to be noted that the upper surface 48 of the fourth part 42 is curved having a generally concave configuration.

Disposed and located within the confines of the living quarters 10 there is provided a bed-bunk and lounge-sofa arrangement 50 which, as illustrated in dotted lines in FIGURE 1 of the drawing may be selectively positioned in a first or storage position X, a second or bed-bunk position Y and a third or sofa-lounge position Z, in accordance with the needs and desires of a user.

The bed-bunk and lounge-sofa arrangement 50 is better illustrated in the second or bed position Y in solid lines

in FIGURE 7 of the drawing and in the third or lounge-sofa position Z in FIGURE 8 of the drawing.

The structural details of the bed-bunk and lounge-sofa arrangement 50 is best illustrated in FIGURES 3, 4, 5 and 6 of the drawing wherein the arrangement 50 comprises first 52 and second 54 elements on which cushions 56 may be placed with each of the elements 52 and 54 comprising elongate relatively rigid side members 60 which extend generally laterally of the living quarters 10 with the adjacent end portions of the side members 60 be connected together by relatively rigid elongate end members 62 which extend generally longitudinally of the living quarters 10. A suitable bottom 64 is secured to the side 60 and end 62 members so that the shape, configuration and construction of the elements 52 and 54 are substantially similar one to the other.

As illustrated in FIGURE 5 of the drawing, the end members 62 of the elements 52 and 54 are each generally longitudinally inwardly offset from the end portions of the respective side members 60 so that the end portions of the end members 62 will define engagements 66 for engaging the parts 34, 36, 40 and 42 of the guide-support structure 32 so that the elements 52 and 54 of the bed-bunk and lounge-sofa arrangement 50 may be supported by the guide-support structure 32 on movement of the bed-bunk and lounge-sofa arrangement from the first or storage position X to the second or bed-bunk position Y or the third or lounge-sofa position Z, as desired by the user.

Suitable hinge means 70 is provided for hinging the elements 52 and 54 of the bed-bunk and lounge-sofa arrangement 50 together to enable the elements 52 and 54 thereof to have pivotal or swinging movement relative to each other and as illustrated, the hinge means 70 is carried by the adjacent ones of the side members 60 which are disposed in an upward relationship to the other side members 60 of the elements 52 and 54 when the bed-bunk and lounge-sofa arrangement 50 is disposed in the first or storage position X.

Suitable abutments 72 are provided on the second part 36 of the bed-bunk rails for engagement with the engagements 66 defined by the end portions of the side members 60 of the elements 52 and 54 for maintaining the bed-bunk and lounge-sofa arrangement in the second or bed-bunk position Y as illustrated in FIGURE 7 of the drawing and it is to be understood that the distances between the abutments 72 on the second part 36 is dimensioned so as to engage an engagement 66 on each of the elements 52 and 54.

Further, an abutment 74 is provided on the third part 40 of the sofa-lounge rail of the guide-support structure 32 for engaging the engagement 66 of the side member 60 of the second element 54 of the bed-bunk and lounge-sofa arrangement 50 when in the third or lounge-sofa position Z as illustrated in FIGURE 8 of the drawing and it is to be noted that the engagement 66 of the other side member 60 of the second element 54 rides on the concave surface 48 of the fourth part 42 of the guide-support structure 32 with the first element 52 of the bed-bunk and lounge-sofa arrangement 50 having the engagement 66 of one of the side members 60 engaging an abutment 76 which is secured to the respective side wall portion 26 of the living quarters 10.

An abutment 78 is provided at the end portion 46 of the fourth part 42 of the guide-support structure 32 for engaging the engagement 66 of the side members 60 of the bed-bunk and lounge-sofa arrangement 50 which rest on the first part 34 of the guide-support structure 32 when the bed-bunk and lounge-sofa arrangement 50 is in the first or storage position X. Suitably secured to the respective side wall portion 26 of the living quarters 10 are abutments 80 which are vertically spaced one from the other with the upper abutment 80 carrying a longitudinally movable pin 82 which may be inserted into an opening or aperture 84 that is provided in the end portion of the

uppermost side member 60 of the first element 52 of the bed-bunk and lounge-sofa arrangement.

Accordingly, it should be understood that by reason of the arrangement 66 of the side members 60 which provide for the support of the bed-bunk and lounge-sofa arrangement 50 during movement thereof between the positions X, Y and Z on the guide-support structure 32 that the engagement 66 with the cooperation of the abutment 72, 74, 76 and 78 also secure the bed-bunk and lounge-sofa arrangement 50 in the selected position X, Y or Z to maintain the bed-bunk and lounge-sofa arrangement 50 in the position which has been selected by the user.

By controlling the distance at which the first 34 and the second 36 parts of the guide-support structure 32 which defines the bed-bunk rails from the floor 18 of the living quarters 10 it is possible that an auxiliary mat M may be placed on the floor 18, as illustrated in FIGURE 7 of the drawing, so that the living quarters 10 will be provided with sleeping accommodations that would suitably handle six adults.

Having thus described the structural relationship of the living quarters 10, the guide-support structure 32 and the bed-bunk and lounge-sofa arrangement 50, relative to each other, a brief description will be disclosed for enabling a user to easily and readily position the bed-bunk and lounge-sofa arrangement 50 in the selected one of the positions X, Y and Z.

Commencing with the first or storage position X, when it is desired to position the bed-bunk and lounge-sofa arrangement 50 in the second or bed-bunk position Y it is first necessary for the user to disengage movable pin 82 and to tip the arrangement 50 through the intermediate position Y1 as illustrated in FIGURE 7 of the drawing until the engagements 66 of the second element 54 of the arrangement 50 come into engagement with the second part 36 of the guide-support structure 32. Then the arrangement 50 is moved on the first 34 and the second 36 parts of the guide-support structure until the engagement 66 of the side member 60 of the second element 54 of the arrangement 50 engages the abutment 72 and then by merely pivoting or swinging the first element 52 about the hinge means 70, by intermediate position Y2 as illustrated in FIGURE 7 of the drawing, the first element 52 has the engagement 66 of the side member 60 in engagement with the second 36 of the guide-support structure 32, as illustrated by solid lines in FIGURE 7 with the abutment 72 engaging the engagement 66 so that the bed-bunk and lounge-sofa arrangement 50 is securely positioned on the first 34 and the second 36 parts of the guide-support structure 32 in the bed-bunk position in the second or bed-bunk position Z.

In order to move the bed-bunk and lounge-sofa arrangement 50 from the second or bed-bunk position Z to the storage position X it is merely necessary to reverse the procedural steps as stated above.

Starting with the first or storage position X, to move the bed-bunk and lounge-sofa arrangement 50 to the third or lounge-sofa position Z it is first necessary to disengage the movable pin 82 and to tip the arrangement 50 and urge or push same to an intermediate position Z1 with the engagements 66 of the side members 60 riding on the surfaces of the first 34 and fourth 42 parts of the guide-support structure 32 so that the lowermost engagements 66 of the upper or first element 52 of the arrangement 50 will clear and be able to go under the second part 36 of the guide-support structure 32. By merely lifting the engagements 66 of the lower or second element 54 over the abutment 78 the arrangement 50 then slides down the arcuate surface 48 of the fourth part 42 until the engagements 66 on the side member 60 of the second element 54 of the arrangement 50 engages abutment 74 and by merely pivoting the first element 52 about hinge means 70 through an intermediate position Z2, as illustrated in FIGURE 8 of the drawing, until the engagement 66 of the side member 60 of the first element 52 of the

arrangement 50 engages the abutment 76 so that the arrangement 50 will then be in the third or lounge-sofa position Z as shown in solid lines in FIGURE 8 of the drawing so that the user may lounge on the sofa arrangement 50 in the third position Z and have a vista view through the window openings 28 of the living quarters 10.

Here again to change the position of the bed-bunk and lounge-sofa arrangement from the third or lounge-sofa arrangement Z to the storage position X it is merely necessary to reverse the procedural steps as stated above.

While I have described and disclosed the subject inventive concept as particularly adapted for use in connection with pick-up type campers it is to be understood that such description or disclosure is not to be considered as a limitation to the scope of the inventive concept.

The improved guide-support structure 32 for supporting the bed-bunk and lounge-sofa arrangement 50 together with the engagements 66 and the abutments 72, 74, 76, 78 and 80 for maintaining the arrangement 50 when supported in the positions X, Y and Z are equally adapted for homes, roomettes, cubicles, as well as railway cars, boats and other types of vehicles.

Accordingly, the scope of this invention should not be deemed to be limited by the precise embodiments or modifications as herein shown, illustrated, described and disclosed with other embodiments or modifications intended to be reserved especially as they fall within the claims here appended.

I claim:

1. A bed-sofa arrangement comprising
a plurality of substantially planar elements,
means for securing the elements together for enabling the elements to have pivotal movement relative to each other,
support structure for enabling the elements to be disposed in a plurality of positions, a first position which is for storage, a separate second position defining a bed and a separate third position defining a sofa, and
devices for maintaining the elements in substantially parallel relationship relative to each other in the first position, in substantially co-planar relationship relative to each other in the second position and in an angular relationship relative to each other in the third position.

2. The bed-sofa arrangement as set forth in claim 1, wherein said devices comprise
engagements carried by each of the elements, and
abutments carried by the support structure.

3. The bed-sofa arrangement as set forth in claim 2 wherein said engagements are defined by portions of the elements which project generally outwardly therefrom.

4. The bed-sofa arrangement as set forth in claim 1 wherein said support structure comprises
a first elongate part disposed in a plane substantially common to a second elongate part and in spaced relationship relative thereto to define therewith a space therebetween.

5. The bed-sofa arrangement as set forth in claim 4 wherein said elements are supported by the first part of the support structure when the elements are disposed in the storage position.

6. The sofa-bed arrangement as set forth in claim 4 wherein the elements are supported by the first and the the second parts of the support structure when the elements are disposed in the bed position.

7. The bed-sofa arrangement as set forth in claim 6 wherein said devices comprise
abutments carried by at least one of the parts of the support structure for engaging engagements carried by at least one of the elements.

8. The bed-sofa arrangement as set forth in claim 7 wherein said abutments are carried by the second part of the support structure and the engagements are carried by each of the elements.

9. The bed-sofa arrangement as set forth in claim 1 wherein said support structure comprises
a plurality of parts,
one of said parts being elongate and substantially flat with another one of said parts being arcuate, and
means joining the one and the another part of the support structure together to define a continuous surface on which the elements may be supported.

10. The bed-sofa arrangement as set forth in claim 9 wherein at least one of said elements is supported by the one and the another part of the support structure when the elements are disposed in the sofa position.

11. The bed-sofa arrangement as set forth in claim 10 wherein the devices comprise engagements carried by the elements and abutments carried by the one and the another part of the support structure.

12. The bed-sofa arrangement as set forth in claim 10 wherein the abutment of the another part of the support structure is defined by the arcuate configuration thereof.

13. The bed-sofa arrangement as set forth in claim 4 wherein said support structure further comprises
a third elongate part disposed in subjacent relationship to the first and the second parts and in substantially parallel relationship relative thereto.

14. The bed-sofa arrangement as set forth in claim 13 wherein said support structure further comprises
a fourth part for connecting the one part of the support structure to the third part thereof.

15. The bed-sofa arrangement as set forth in claim 14 wherein said fourth part of the support structure has an arcuate configuration inclined generally upwardly from the third to the first part of the support structure.

16. The sofa-bed arrangement as set forth in claim 15 wherein said fourth part of the support structure is disposed below the space defined between the first and the second parts of the support structure.

17. The bed-sofa arrangement as set forth in claim 1 wherein said arrangement is in combination with living quarters having wall portions,
means for securing the support structure to opposed ones of the wall portions with the support structure being in aligned relationship, and
means for securing some of the devices which support the elements in the storage and sofa positions to the wall portions in spaced relationship relative to the associated support structure.

18. The bed-sofa arrangement as set forth in claim 1 wherein the maintaining devices are arranged to hold all the elements in the substantially parallel relationship in the first storage position, all of the elements in the substantially coplanar relationship in the second bed position and some of the elements in the angular relationship in the third sofa position.

19. The bed-sofa arrangement as set forth in claim 18 wherein there are only two substantially planar elements.

20. The bed-sofa arrangement as set forth in claim 18 wherein the maintaining devices are arranged to hold the elements in an obtuse angular relationship in the third sofa position.

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CASMIR A. NUNBERG, *Primary Examiner.*