March 2, 1971 L. L. LOW 3,567,272

CONVERTIBLE DINING AND SLEEPING FACILITIES FOR VEHICLES

Filed April 3, 1969

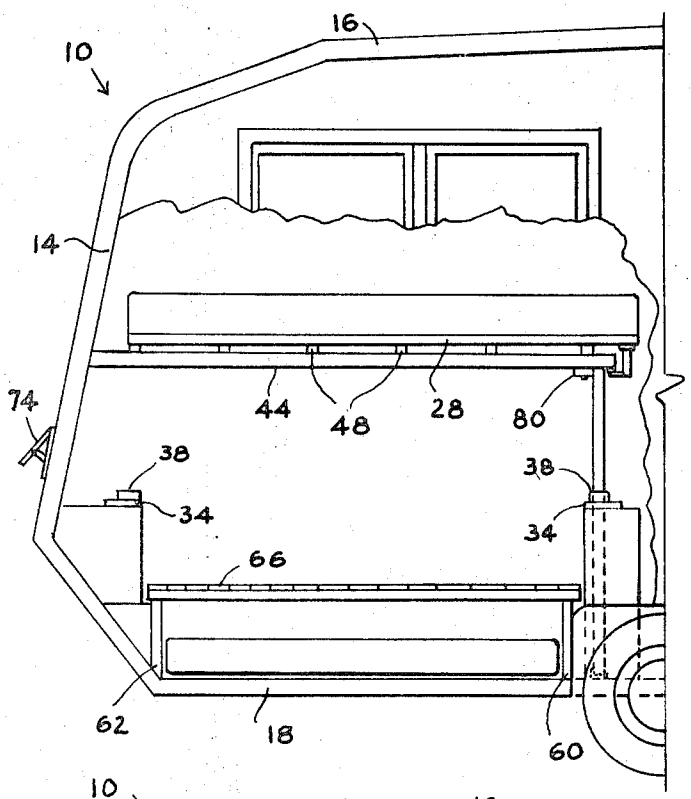


FIG. 1.

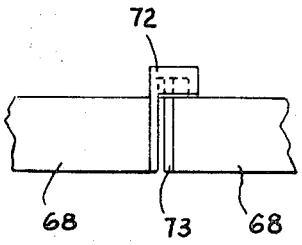


FIG. 5.

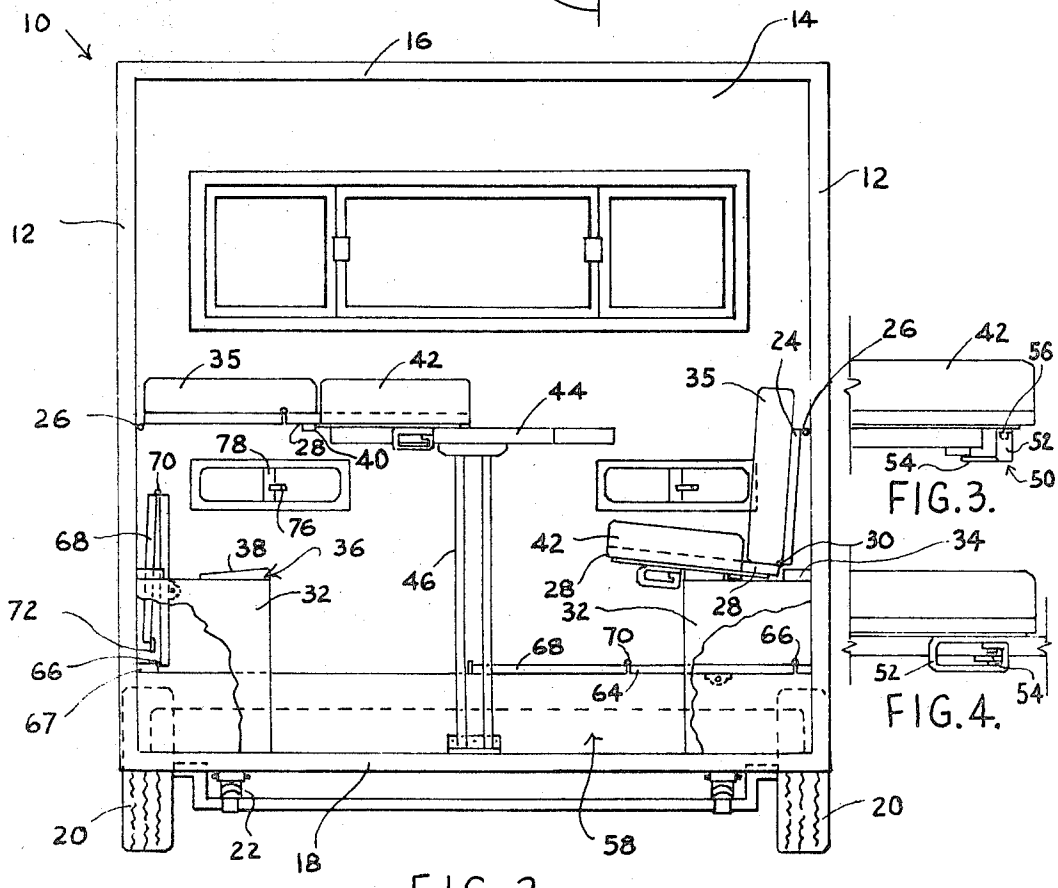


FIG. 3.

FIG. 4.

FIG. 2.

United States Patent Office 3,567,272 Patented Mar. 2, 1971

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CONVERTIBLE DINING AND SLEEPING FACILITIES FOR VEHICLES

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Filed Apr. 3, 1969, Ser. No. 813,174
Int. Cl. B60p 3/32
U.S. Cl. 296—23 10 Claims

ABSTRACT OF THE DISCLOSURE

A compact mobile vehicle is designed alternatively to provide generous dining and sleeping facilities in a limited space, with a minimum of inconvenience. The vehicle has at one end a dining table flanked by benches, the back and seat portions of which benches can be rearranged to provide an upper bed support, resting on, and affixed to, the table. A lower bed is also provided under the table in a housing of ample capacity to contain the lower mattress, and the bedding of both the upper and lower beds, the housing including a sectional cover which is normally closed and dirt-tight and provides a tread surface for persons seated at the table, but is arranged to be folded back and secured out of the way when the beds are to be used.

This invention relates to mobile vehicles adapted, in limited space, to provide complete cooking, eating and sleeping accommodations for a traveling party, but is more particularly concerned with the convenient and efficient utilization of the dining area and the dining facilities for sleeping purposes.

The very vehicle partially shown and described herein for illustrative purposes is further shown and described in my companion application, Ser. No. 813,173, filed concurrently herewith. The kitchen facilities and some associated sitting and sleeping facilities are disclosed in detail, and claimed, in said companion application. Reference may be had to said companion application for features of the illustrative vehicle not fully shown or described herein.

A vehicle having a dining table and bed adapted to utilize the same general area usually includes a relatively short table which is either removably or hingedly attached to a wall to make room for a bed and bedding which are brought out of hiding and put together with considerable tedium and difficulty.

In accordance with the present invention the rearrangement required, the storage space required, the assembling required, and the transference of parts and equipment to and from storage are reduced to a minimum and the common utilization of parts for both purposes is availed of to a marked degree.

It is a feature that the dining table, which is flanked by benches, can remain fixed in place at all times, or at least for dining and sleeping; that the back and seat portions of the benches are adapted to be swung quickly and easily onto the table top to form an upper bed; and that the bench cushions make up the complete mattress of the bed. The reverse transformation is equally simple and fast.

It is a further feature that a bed is provided on the floor, desirably underneath the benches and table, and normally enclosed in a housing whose cover forms a raised tread surface for diners sitting on the benches. The surface provided by the cover is dirt-tight, so that dirt deposited on the housing cover cannot find its way into the lower bed when the cover is closed or in the process of being opened.

The housing is of ample height to house the mattress of the lower bed and the bedding of both beds, and the housing cover is foldable out of the way when the lower bed is to be used. With the exception of the two back

cushions, all of the upper bed and table parts may be attached fixedly or hingedly to parts of the trailer body, the movable parts being simply operated back and forth between their dining positions and their sleeping positions. The beds are of ample double bed size, and they divide the available headroom equitably between them.

Other objects and advantages will hereinafter appear.

In the drawing, forming part of this specification,

FIG. 1 is a fragmentary view in side elevation, partly broken away, showing the rear end of a vehicle, illustratively a trailer which embodies the invention in the form presently regarded as most desirable;

FIG. 2 is a sectional view in transverse elevation showing particularly the interior of the rear end of the illustrative trailer, the parts shown on the right in FIG. 2 being shown in normal sitting and dining condition, and those on the left side being shown in condition for sleeping;

FIG. 3 is a fragmentary detail view in side elevation of a locking device shown on a larger scale than that in which it is seen in FIG. 2;

FIG. 4 is a similar view in end elevation of the locking device of FIG. 3; and

FIG. 5 is a fragmentary detail edge view, on a larger scale than the other figures, of means for sealing a lower bed cover against admission of dirt where the cover sections meet.

The dining, sitting and sleeping facilities forming the subject of the present invention are shown and described herein as located in the rear end of the illustrative trailer, but they could just as advantageously be located in the front end instead. As a further alternative they might be oriented at right angles to the disposition in which they are shown, possibly with the table somewhat shorter, and the beds somewhat narrower. The illustrative arrangement is, however, a very advantageous, space-saving arrangement, being probably the most compact and convenient arrangement available.

The trailer shown in the drawing combines a complete kitchen unit in one end of the trailer with the sitting, dining and sleeping facilities forming the subject of the present application in the opposite end, the illustrative trailer body measuring about six and one-half feet in width and less than twelve feet in length. A side door, not shown, is provided between the kitchen and dining units.

The trailer body **10** includes side walls **12**, a rear end wall **14**, a roof **16** and a floor **18**. These parts are of conventional construction and no attempt has been made to show interior details of this structure. Except for the features herein specifically described, or specifically described in my companion application, Ser. No. 813,173, filed concurrently herewith, the trailer may be assumed to be generally of conventional construction. It includes the usual hitch (not shown) and running gear comprising two wheels **20**, and a spring suspension **22**. The usual jack facilities are provided, though not necessarily as unitary parts of the trailer, for assuring support of the trailer, when detached from the automobile, in a stable, level condition. An entrance and exit door (not shown) is provided in the right side wall of the trailer (left as viewed in FIG. 2) between the kitchen, sitting and sleeping facilities located in the forward end, and the dining, sitting and sleeping facilities located in the rear end and forming the subject of the present invention.

The illustrative trailer, in its entirety, is designed to provide normal kitchen, sitting, dining, and sleeping facilities for six persons, the structure at the rear end of the trailer being designed to provide a dining table and associated benches adequate for six persons, and two double beds, one supported on the dining table and the other located on the floor beneath the dining table. The

benches are convertible to form the upper, table-supported, bed.

The right and left hand benches are identical, both being normally in the condition shown on the right in FIG. 2, and both being quickly and conveniently convertible to the condition shown on the left in FIG. 2.

As seen in FIG. 2, the bench shown on the right (this being on the left side of the trailer) comprises a rigid back panel **24**, desirably of plywood, which is supported from the adjacent trailer wall **12** by a piano hinge **26**, and a seat panel **28** which is connected to the back panel **24** through a piano hinge **30**. The seat panel normally rests upon two fixed pedestals **32**, one at the rear end of the seat and the other at the forward end (nearer the observer in FIG. 2).

At least one of the pedestals includes at the outer end of its upper surface, a shouldered projection **34** engageable with a shoulder portion of the seat panel **28** (the outer face of the panel itself as shown), to maintain the back panel at a desirable inclination. This makes a comfortable seat arrangement for the occupants and it also assures that the back cushion **35**, which is unattached, will normally rest against the back panel **24**—a neat and orderly arrangement.

Each pedestal also includes on its upper surface at a substantial distance inward from the projection **34**, a shouldered projection or block **36** having an upwardly and inwardly inclined supporting surface **38** on which the seat panel **28** rests, the seat panel being caused to assume the slope of the surface **38**. A shouldered projection **40** extends downward from the seat panel **28** and engages the outer, shouldered end of the block **36** to prevent inward sliding of the seat panel, and so to determine and maintain the seat parts normally in the positions in which they are shown at the right hand side of FIG. 2.

A cushion **42** of the same thickness as the cushion **35** is permanently affixed to the seat panel **28**, the inner boundary of the cushion **42** being coincident with, or preferably extending a little farther inward than, the inner boundary of the seat panel. The outer boundary wall of the seat cushion **42** is spaced from the hinge **30** by a distance equal to its own thickness to accommodate the lower end of the back cushion **35** between itself and the back panel, as seen at the right in FIG. 2. The two cushions **35** and **42** are of the same thickness.

The bench, and the bench supporting means at the left hand side of FIG. 2, may duplicate the bench and bench supporting means at the right hand side, and corresponding reference characters have accordingly been applied to corresponding parts.

Between the two benches there is interposed a fixed table top **44**, the table top being of a width to extend substantially from the inner edge of one seat panel to the inner edge of the other. At its rear end, the table top is rigidly affixed in any suitable manner to the rear wall **14** of the trailer, and at its forward end the table top is firmly and fixedly supported from the trailer floor by a rigid metallic frame **46**.

The table top and benches are long enough to accommodate three persons side by side, at each side of the table. The table top is generally rectangular in form but has its front corners cut away somewhat to facilitate access to the benches, and to avoid the presence of sharp corners which could prove both obstructive and injurious. As thus far described, the table top and benches form a neat and compact dining facility.

They can, however, be quickly and conveniently converted into a sleeping facility as illustrated in part at the left side of FIG. 2. In effecting the conversion, the cushion **35** is first lifted from its normal position and set aside temporarily, out of the way. The seat panel **28** is then swung upward, pivoting about the piano hinge **30**, into a position clear of the nearer edge of the table top **44**, and is then guided clear of the table edge as the back panel **24** is swung inward and upward, about the piano hinge **26** as a fulcrum, to a horizontal position.

In the horizontal position the lower face of the panel **24** stands in the plane of the upper surface of the table. The seat panel **28**, whose lower face is provided with thin, table-protective cushioning strips **48**, is then set on the table top and clamped firmly thereto by a clamp **50**.

The clamp **50** is desirably in the form of a bellcrank, consisting of a hollow handle or operating arm **52**, and an angularly related relating arm **50** engageable with the underface of the front or free margin of the table. The bellcrank is pivotally mounted on the underside of the panel **28** by a pivot bolt **56**. When the clamp **50** has been applied, the lower faces of panels **24** and **28** are firmly fixed in the plane of the table top. The cushion **35** is now put in place, exactly filling the space between the associated cushion **42** and the associated trailer side wall. This completes one-half of an upper bed, supported by the table top, and in part by the piano hinge **26**. The other half is developed by a like conversion of the other bench parts.

It is not essential, of course, that the right hand and left hand bed components be exact duplicates of one another, or that they meet exactly along the center line of the table, so long as they jointly provide a complete bed. There is, however, a definite element of simplicity, efficiency and economy in making corresponding parts identical.

Either pedestal **32** can be used conveniently as an aid in climbing onto the upper bed. The bed, supported on the table top, is at a comfortably safe level above the floor. Should anyone fall out of the bed he would not be likely to sustain a serious injury.

Provision is made beneath the table of a lower double bed and of a housing which normally encloses and protects the mattresses and bedding for both the upper and lower beds. The cover of this housing can be folded back out of the way, but it normally provides a raised tread surface for persons seated on the benches.

The housing **58** is composed in part of rigid, parallel, vertically disposed, transversely extending, front and rear plates or boards **60** and **62**. These boards are located to extend from side to side of the trailer and just between the pedestals so that they bound a horizontal area which extends from side to side of the trailer and substantially from the rear boundaries of the front pedestals to the front boundaries of the rear pedestals.

The cover is composed of two complementary sections, which are desirably substantially identical. In a preferred embodiment, each section is composed of an outer panel **64** which is connected to a fixed anchor strip **67** adjacent a vehicle side through a piano hinge **66**, and a second or inner panel **68** which is connected to the outer panel **64** through a second piano hinge **70**. If the two cover parts are identical the inner panels **68** will normally meet under or substantially under the exact center line of the table, but this exact relationship is not, of course, essential, so long as the inner panels do substantially meet, with marginal portions of all four panels resting on the upper faces of the boards **60** and **62**.

The piano hinges enable the cover panels of each section to be folded back into upright positions between the associated pedestals, as shown at the left in FIG. 2. The piano hinges perform another very important function when the cover sections are closed or even when they are being opened or closed, since, through their continuity and snugness, they form dirt-tight seams for protecting the housing against ingress of dirt, and even form an almost perfect seal against ingress of liquid. This is especially important because the cover forms a tread surface for the possibly dirty shoes of diners, and beverages may be accidentally spilled by the diners. The bedding should be, and is, effectively protected against dirt from shoes and against spilled liquids.

The center seam of the cover is protected against ingress of foreign matter by an overhanging or briding

cover strip **72**, attached to an upper margin of one of the inner cover panels **68** and an edge strip **73** on the other panel **68** which forms an upstanding lip extending from end to end of the panel **68** to which it is attached. The cover strip **72** completely encloses the lip, being hollow on the lower side and closed at the ends. (See FIG. 5.)

The trailer has the usual complement of normal windows in the upper part of its body. It also has two small screened windows **74** of the jalousie type in the rear wall beneath the table for the benefit of the occupants of the lower bed. Each window is opened and closed by a crank **76** which operates through a central vertical division strip **78** of the window.

An electric light **80** is provided on the underface of the table top **44** for the benefit of the occupants of the lower bed.

I have described what I believe to be the best embodiments of my invention. I do not wish, however, to be confined to the embodiments shown.

I claim:

1. A mobile vehicle having, in combination,

(a) a dining table top,

(b) means supporting the table top at a convenient fixed level for dining purposes,

(c) benches at opposite sides of the table, each comprising

(c1) a continuous, rigid back member, together with means hingedly supporting said back member along the upper edge thereof, at substantially the fixed table top level, and having an opposite free edge swingable about the hinge axis, the rigid back member being too narrow to reach from the hinge axis to the nearest edge of the table top,

(c2) a continuous, rigid seat member, together with means hingedly connecting it along its outer edge to the movable lower edge of the rigid back member,

(c3) fixed pedestals on which the seat members normally rest,

(c4) a seat cushion mounted on the rigid seat member with its inner boundary coinciding substantially with the inner edge of said seat member,

(c5) a table top clamp carried marginally by the rigid seat member, and

(c6) a separable back cushion,

the construction and arrangement being such that, with a back cushion removed, the associated rigid seat and back members may be swung up and then into aligned horizontal positions, with the lower face of the rigid seat member resting squarely on the table top and locked thereto, and with the seat cushion disposed to extend to a mid-portion of the table, one end of a bed may be completed by the mere replacing of the removed back cushion, and the remainder of the bed may be provided by a like rearrangement of the corresponding parts of the opposite bench.

2. A mobile vehicle as set forth in claim **1** in which at least one pedestal on each side of the table is provided on its upper surface with a stop for limiting outward movement of the lower end of the associated rigid back member, thereby to maintain the rigid back member and the back cushion at a desired inclination.

3. A mobile vehicle as set forth in claim **2** in which a protruding portion is provided on the lower surface of the rigid seat member, shoulder at its inner extremity, and the pedestal is further provided with a sloping projection on its upper surface, separated by a substantial distance from the stop and shouldered at its outer end for engaging the inner shouldered end of the protruding portion of the rigid seat member to limit inward movement of the lowered seat member, said sloping projection serving also to maintain the rigid seat member at a comfortable upward inward inclination.

4. A mobile vehicle as set forth in claim **1** in which at least one pedestal provides an accessible step at a convenient level for assisting persons to climb into the bed on the table top when the bed is made up.

5. A mobile vehicle as set forth in claim **1** in which a further bed is provided on the trailer floor beneath the table, and a housing is provided for said bed including a rigid sectional cover, the housing being of adequate depth to enclose the mattress of the lower bed, the bedding therefor, and the bedding for the upper, table-supported bed.

6. A mobile vehicle as set forth in claim **5** in which the sectional housing cover comprises distinct right and left hand sections which meet under the middle portion of the table, each section including an outer hingedly mounted panel and an inner panel hingedly connected to the outer panel, the panels of each portion being foldable into a compact upright formation between the associated seat pedestals, and means for retaining the respective cover sections in such compact upright formation when the lower bed is in use.

7. A mobile vehicle as set forth in claim **6** in which one of the inner panels of the lower bed cover is provided along the inner margin of its upper surface with a continuous protruding or overhanging sealing strip, adapted to bridge and seal the narrow space between the inner panels of the two cover sections when the cover is in closed position, and in which all the panel supporting and panel connecting hinges of the cover are piano hinges which extend from end to end of the panels, the construction and arrangement being such that the lower bed is effectively protected against the admission of dirt that may be deposited on the housing cover.

8. A mobile vehicle as set forth in claim **1** in which the table is attached at one end to an end wall of the trailer and extends lengthwise of the trailer, and the benches extend along opposite side walls of the trailer alongside the table, the table and each bench being long enough to accommodate at least three people comfortably side by side.

9. A mobile vehicle having a bed housing on the floor at one end thereof, suitable for containing an ever-ready bed both during storage and use, which comprises a horizontal floor structure of suitable dimensions for supporting a bed in use, fixed upstanding end walls, vertically disposed, transversely extending, floor supported side walls whose upper extremities lie in a common horizontal plane, and a complete cover composed of retractable, meeting cover sections, each adapted normally to lie flat on the upper faces of the side walls, and each composed of inner and outer panels, and separate hinge means connecting each outer panel to an end wall, and to the associated inner panel, respectively, the construction and arrangement being such that the cover panels can be folded up out of the way at the ends of the housing when the bed is to be used, the housing having sufficient depth and area to house and confine the bed and bedding in usable condition.

10. A mobile vehicle as set forth in claim **9** in which the hinges employed for mounting and connecting the panels of the respective cover sections are piano hinges that completely seal the hinge joints, the construction and arrangement being such that a raised, dirt-tight, tread surface is provided by the cover.

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PHILIP GOODMAN, Primary Examiner

U.S. Cl. X.R.

5—3; 297—118