

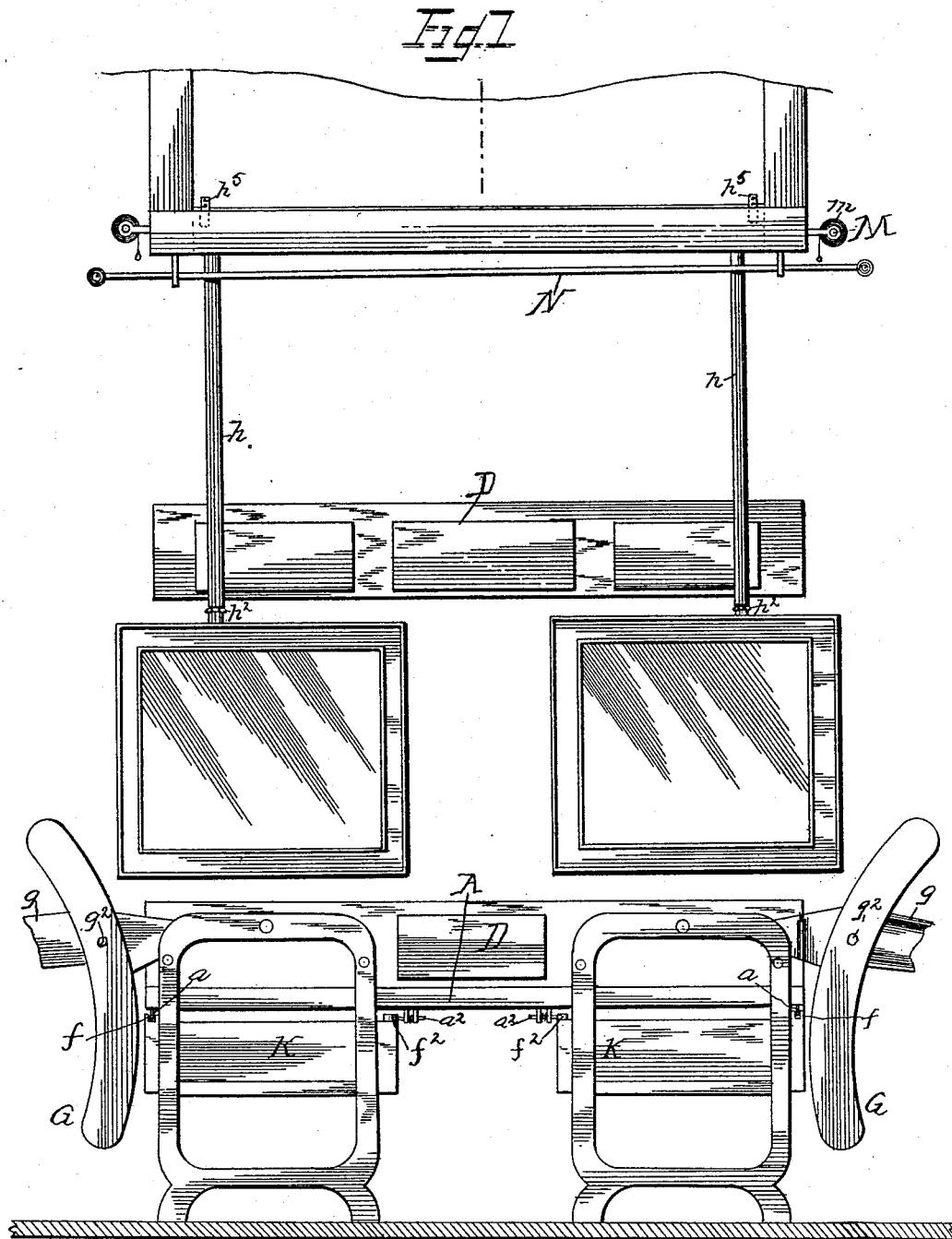
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3 Sheets—Sheet 1.

W. W. M. WILLIAMS
CONSTRUCTION OF BERTHS.

No. 525,673.

Patented Sept. 4, 1894.



Witnesses
Thos. J. Root, Jr.
David St. Mead

Inventor
Webb W. M. Williams
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his Attorney.

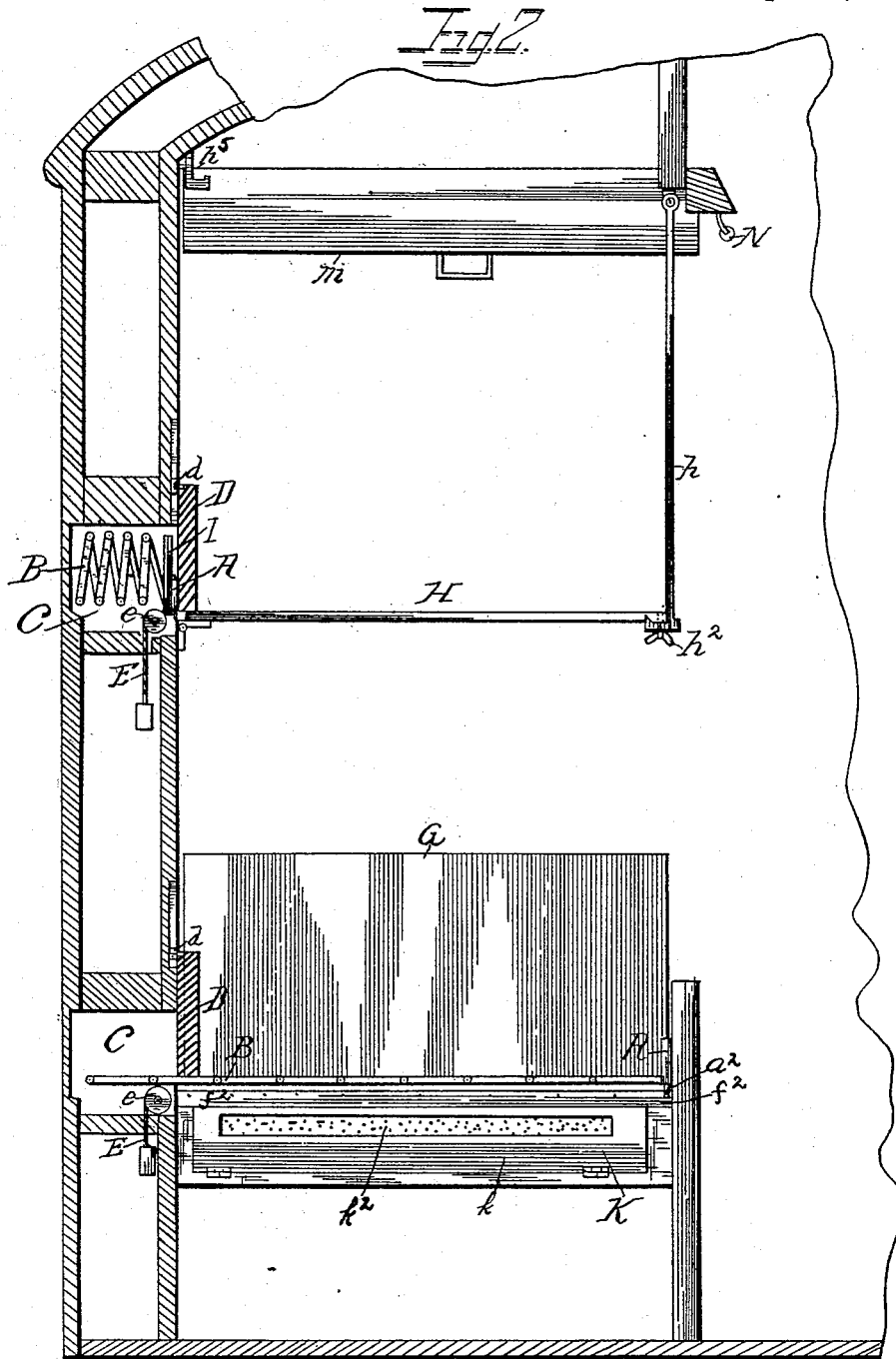
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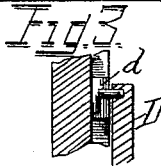
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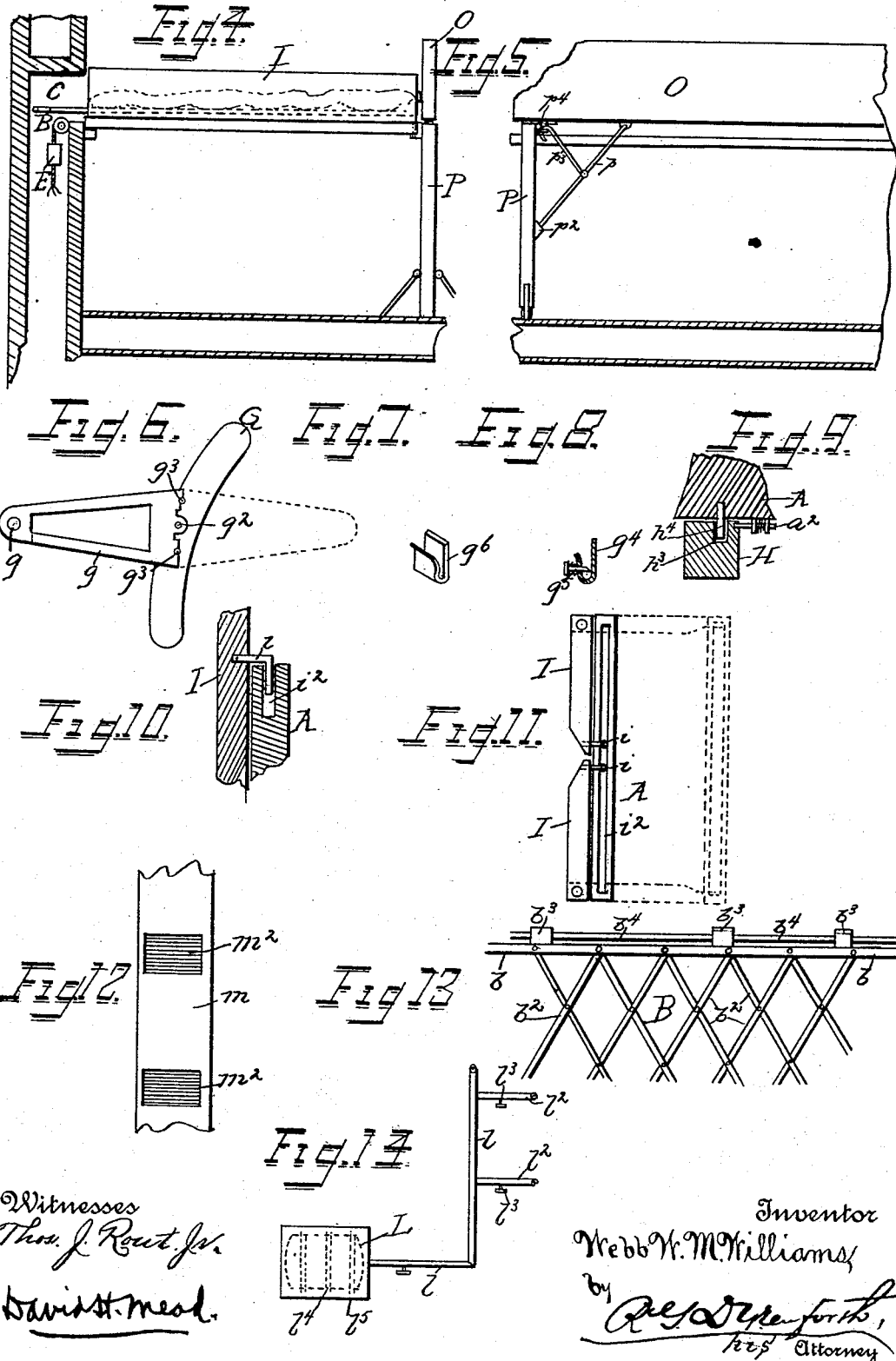
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UNITED STATES PATENT OFFICE.

WEBB W. M. WILLIAMS, OF OMAHA, NEBRASKA, ASSIGNOR OF ONE-HALF
TO A. H. MERCHANT, OF SAME PLACE.

CONSTRUCTION OF BERTHS.

SPECIFICATION forming part of Letters Patent No. 525,673, dated September 4, 1894.

Application filed December 1, 1893. Serial No. 492,515. (No model.)

To all whom it may concern:

Be it known that I, WEBB W. M. WILLIAMS, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in the Construction of Berths; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to berths, and, particularly, to berths for use in sleeping-cars, ships, &c., the invention being also capable of use in houses.

The object of the invention is to produce a berth which shall be collapsible and made to occupy very little space, so that when applied to the wall of a car, ship, or building, it may be closed into the wall when not in use, leaving the usual space for ordinary purposes; furthermore, the object of the invention is to produce a berth of such construction that it may easily be opened to form a bed, and may be securely fastened in either a closed, open, or partially-open position; furthermore, the object of the invention is to produce a berth of such construction that the parts appertaining thereto may be well ventilated; and, furthermore, the object of the invention is to produce a berth which shall be simple and cheap in construction and capable of easy and rapid manipulation to place it in position for use or in a position out of use.

With these objects in view, the invention consists, essentially, of a berth provided with a collapsible bottom, formed of sections hinged to one another, one edge of the bottom being attached to the wall of a car, ship, or house, and the other edge being provided with a rigid piece; furthermore, the invention consists of a berth provided with a collapsible bottom, formed of sections hinged to one another, one edge of the bottom being attached to the wall of a car, ship, or house, and suitable supports for sustaining the bottom when in a horizontal position; furthermore, the invention consists of a berth comprising a recessed wall and collapsible berth bottom to be folded within the recess, and to be pulled out of it for use, and suitable supports for the bottom when in use; furthermore, the in-

vention resides in various novel details of construction, whereby the objects of the invention are attained.

The invention is illustrated in the accompanying drawings, in which—

Figure 1— is a front elevation of one embodiment of my invention, the same being shown in connection with a railway-car, the lower berth being shown in position for use and the supports for the upper berth being shown in position ready for receiving the bed-bottom. Fig. 2— is a view, partly in section, of a berth applied to a car, the parts being in the same position as those in Fig. 1. Fig. 3— is a detail sectional view, showing the manner of attaching the panel by which the recess for the reception of the berth is closed. Fig. 4— is a side view, partly in section, showing the berths as applied to the walls of a building. Fig. 5— is an end elevation of what is shown in Fig. 4. Fig. 6— is a detail view, illustrating the form of arm used on the outer ends of seats of a car when my berth is applied thereto. Fig. 7— is a perspective view of the catch by which the arms are sustained when they are turned back to make room for the berth. Fig. 8— is a sectional view of the means of attaching the arms to the side of a car. Fig. 9— is a sectional view, showing the means of locking the bottoms of the upper berths in any desired position. Fig. 10— is a sectional view illustrating the means for moving the head and foot boards of the upper berths into place for use. Fig. 11— is a plan view, showing the arrangement of the head and foot boards and the means for moving them into and out of position. Fig. 12— is a view of a portion of one of the curtains by which the berths are separated. Fig. 13— is a fragmentary view of one of the sections of which the bottoms are formed; and Fig. 14— is an illustration of the device for use in inflating rubber mattresses for use on the berths.

In carrying out my invention, when the same is to be applied to sleeping-cars or to ships, the berths are arranged one above another in the usual manner, and, as illustrated in Figs. 1 and 2, of the drawings, each berth is provided with a rigid front piece A, to the lower edge of which front piece is attached a collapsible bottom B. This bottom is com-

posed of a series of hinged sections, each section being formed of a frame *b*, to which are attached a series of cross-pieces or slats *b*², forming means for supporting a mattress.

5 At the edge of each frame *b* are lugs *b*³ for receiving rods *b*⁴, by which adjacent sections of the collapsible bottom are attached in such manner as to permit of their being folded upon each other.

10 The collapsible berth is designed, when not in use, to occupy a recess *C* in the wall of a car or ship. Adjacent to the recess *C* is a panel or door *D* which is of a character to correspond with the other ornamentations of the walls of the car or ship, and this panel is designed to close the recess when the berth is deposited therein, and to be readily displaced when the berth is to be put in position for use. To this end, the door or panel *D* is hinged at its upper end to a sliding block *d*. This block has a play up and down in the wall of the car or ship, sufficient to allow the lower face of the door or panel *D* to rest on the mattress when the berth is in use and the hinge allows the panel or door to be swung entirely out of the way when access to the recess is desired.

To the front piece *A* of the berth is attached a rope or cord *E* which runs over a pulley *e* and extends down into the wall of the car, ship, or building, and has attached to it, a counter-weight which enables the bed to be easily collapsed and closed. In order to guide the front piece *A*, as it is drawn out to unfold the berth bottom, the rear portions of the seats of the car are provided with grooves *f* into which project pins *a* extending downward from the portion *A*. The engagement of the pins *a* with the slots *f* insures the proper position of the berth-bottom during the time the berth is being moved in or out, and prevents displacement, which might be caused by jolting or other movement of the car or ship.

The berth may be drawn out to any desired extent for use, and securely locked in the position to which it is drawn to form a berth of any desired width. To effect this, the inner edges of the seats of cars are provided with ribs *f*² provided at short intervals with slots or indentations which receive the bolts *a*² which are attached to the front piece. These bolts are spring-seated and they may be allowed to engage any of the slots or indentations in the ribs *f*² to retain the berth in any position in which it may be placed.

In the construction of a car seat, when my berth is to be applied thereto, the arms *g*, by which the outer ends of the backs *G* of the seats are supported, are so made that the said arms may be turned back from their normal positions to leave passages for the berths to be pulled out from their places in the walls of the cars or ships. To this end, the arms *g* are pivoted to the backs at points *g*², and spring-seated pins are provided in the backs *G*, and are adapted to engage notches in the arms *g* on each side of the points *g*², at which

the arms are pivoted. The arms *g* are attached to the sides of cars by the rests *g*⁴ and the pins *g*⁵. The pins *g*⁵ are spring-seated so that, when it is desired to pull out the berths at the side of a car, the arms *g* are freed from the pins *g*⁵, and the pins *g*³, *g*³, in the back *G* pushed in, thus allowing the arms *g* to be swung back into the position shown in dotted lines in Fig. 6, leaving space for the withdrawal of the berths. When the arms are thus swung back, they rest in holders *g*⁶ attached to the walls of a car in proper position to receive them.

The upper berths are sustained by supports *H*, which are hinged to the walls of a car, and are adapted to be swung into a horizontal position when the berth is to be used, and are designed to be swung into a vertical position along the side of a car in the nature of a molding or head when not in use.

The supports *H* are provided with longitudinal grooves *h*³, receiving projections *h*⁴ from the end piece *A* and with transverse slots, designed to receive spring bolts or pins *a*² attached to the front piece *A* of the upper berth, to enable this to be drawn out to any desired width and securely retained in place.

The outer ends of the supports *H* are sustained by rods *h* pivotally attached to the roof of a car at points above the ends of the supports. Connection is made between the lower ends of the rods *h* and the supports *H*, by thumb-screws *h*², which form ready and reliable means for connecting and disconnecting the supports and the rods. When not in use, the rods *h* are laid along the roofs of the cars, the free ends being sustained by hooks *h*⁵ at the tops of the cars. Head and foot boards for the upper berths are formed by the boards *I*, *I*, which are mounted on suitable pins in the recess *C*, in such manner that they may be entirely received by the recess when not in use.

Projecting from each of the boards *I* are arms *i*, pivoted to the boards at one end and at the other end, provided with rollers which run along the sides of a slot *i*² in the top of the side-board *A*, as shown in Fig. 10 of the drawings. From this arrangement, it will be seen, that, as the side-board *A* is moved from the position shown in full lines in Fig. 11 to the position shown in dotted lines in that figure, the arms *i* will run along the groove or slot *i*² in the side-board, and thus turn the boards *I* on their pivots, resulting in bringing them into position at right angles to the side-board. When the boards *I* reach a position at right angles to the side-board, they will be firmly retained there against displacement until the bed is closed.

The bedding used is preferably kept in the boxes *K* placed beneath the seats and access is had to these boxes through a door *k* hinged as shown in Fig. 2 of the drawings, the door being provided with ventilated openings *k*², whereby free access of air to the bedding is permitted.

In utilizing my invention, I preferably employ a rubber mattress to be inflated with air. There are many advantages which a mattress of this kind possesses over others for this particular use. One great advantage is, that, when not in use, the air may be discharged and thus the mattress put into condition to occupy very little space. Another advantage possessed by a rubber mattress, is, that air used in inflating the same may be cool in summer and warm in winter. Any suitable means may be employed for accomplishing the warming or cooling of the air, and in Fig. 14 of the drawings, I have shown one means for the purpose. In this figure, L represents a tank or reservoir into which is designed to be placed a quantity of compressed air, to be discharged from the reservoir into mattresses, as required, through a supply pipe l and branch pipes l^2 , the branch pipes each being provided with a stop-cock l^3 for each mattress employed. The reservoir L is surrounded by a coil of pipe l^4 through which, in cold weather, a quantity of steam is passed, and, by its proximity to the air in the reservoir, it will heat the air to any desired temperature. The reservoir is placed in a box or case l^5 which is made water-tight and designed to contain ice in warm weather. From this arrangement, it will be seen that the compressed air may be supplied to the mattresses at any suitable temperature according to the weather.

The adjacent berths are separated by means of curtains held on rollers M which are preferably of the ordinary spring structure. When the berths are made up, curtains wound on these rollers are drawn down between the berths, resulting in separating them, and the ends of the berths opening into the aisles may be closed by means of curtains hung on rods N. The curtains m , arranged between the berths and rolling upon the rollers M, are provided, at intervals, with slatted openings m^2 , the slats being so arranged as to render it impossible to see through the curtains and, at the same time, it permits a free circulation of air through them.

The arrangement of my improved berth, whereby it is adapted for use in houses, is shown in Figs. 4 and 5, of the drawings. According to the arrangement shown in these figures, the panel or front piece and the collapsible bottom are attached, so that, when the berth is made to occupy the space in the wall, the panel which is represented in Figs. 4 and 5, by the letter O, entirely closes the opening to the recess. The outer end of the berth is supported by folding legs P, which, when the bed is not in use, are caused to fold up immediately beneath the end piece O and to occupy a very small amount of space. To brace the legs in position, when in use, the construction of brace more particularly illustrated in Fig. 5 is employed. This consists of a bar p , pivotally attached to the end-piece O at one end, and resting at the other end in

a socket p^2 on the legs. The brace is retained in place by a rod p^3 joined to the middle of the rod p and having at its outer end a hook, engaging a staple p^4 at the upper end of the leg P. The counter-weight E may be employed in connection with the house-berth, if desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A berth provided with a collapsible bottom, formed of sections hinged to one another, and a rigid front piece secured to one edge of the bottom, substantially as described.

2. The combination with a recessed wall, of a collapsible bed bottom held within the recess, a rigid front piece secured to one edge of the bed bottom, and adapted to be pulled outward, and suitable supports for the bottom, substantially as described.

3. The combination with a recessed wall, of a movable panel or door for covering the recess, a collapsible bed bottom formed of hinged sections and held within the recess, a front piece secured to one edge of the bed bottom, and suitable supports for the bed bottom when in use, substantially as described.

4. A berth comprising a collapsible bottom, means for supporting the same in a horizontal position, and a counter-weight connected with the collapsible bottom, substantially as described.

5. The combination with a wall and braces projecting therefrom, of a collapsible bed bottom constructed to be supported by the said braces, and a counter-weight connected with the collapsible bottom, substantially as described.

6. A berth comprising a collapsible bottom, supports for sustaining the same in a horizontal position, and means for locking the bottom in a partially or fully extended position, substantially as described.

7. A berth comprising a collapsible bottom, transversely slotted supports for retaining the bottom in a horizontal position, and catches attached to the bottom and adapted to engage the slots in the supports, to lock the bottom in a partially or fully extended position, substantially as described.

8. The combination with a recessed wall, of a bed bottom adapted to fold into the recess in the wall, suitable supports for the bottom, and a counter-weight connected with the front end of the bottom and arranged to move in the wall, substantially as described.

9. The combination with a recessed wall, of a collapsible bed bottom, adapted to fold into the recess, a panel or door designed to close the recess, the panel or door being hinged adjacent to the opening and being capable of sliding up and down, substantially as described.

10. The combination with a recessed wall, of a collapsible bed bottom adapted to fold into the recess, a front piece attached to the front of the bed bottom, hinged supports de-

signed to sustain the bed bottom, and depending hinged hangers secured to an overhead support and adapted to connect with the outer end of the supports, substantially
5 as described.

11. The combination with a supporting wall, and the extensible bed bottom secured thereto and provided with a suitable front piece, of slotted supports arranged to be
10 swung beneath and support the bed bottom, spring bolts carried on the front piece and adapted to engage the slots in the supports and a bar for sustaining the outer ends of the supports, substantially as described.

12. A berth provided with a collapsible bottom, a rigid front piece, pivoted head, and foot boards, and a connection between the head and foot boards and the front piece,
15 substantially as described.

13. A berth provided with a collapsible bottom, a front piece and pivoted head and foot boards, the front piece being provided in its top with a groove, and arms attached to the head and foot boards and projecting into the
20 groove in the front piece, substantially as described.

14. In combination with a collapsible berth

and a collapsible mattress therefor, the air cylinder surrounded with steam pipes, and with a box adapted to contain ice, substantially as described. 30

15. In combination with the back of a car seat, the arm at one end detachably connected to the side of the car and pivotally connected to the seat back at the other, and the spring
35 seated pins engaging the arm, substantially as described.

16. In combination with the back of a car seat, the arm provided at one end with an opening, a socket attached to the side of the
40 car and designed to receive the end of the arm, and provided with a pin engaging the opening in the end of the arm, the other end of the arm being pivoted to the back of the seat and provided with notches or indenta-
45 tions, and spring pins engaging the notches or indentations, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WEBB W. M. WILLIAMS.

Witnesses:

R. G. DYRENFORTH,
DAVID H. MEAD.