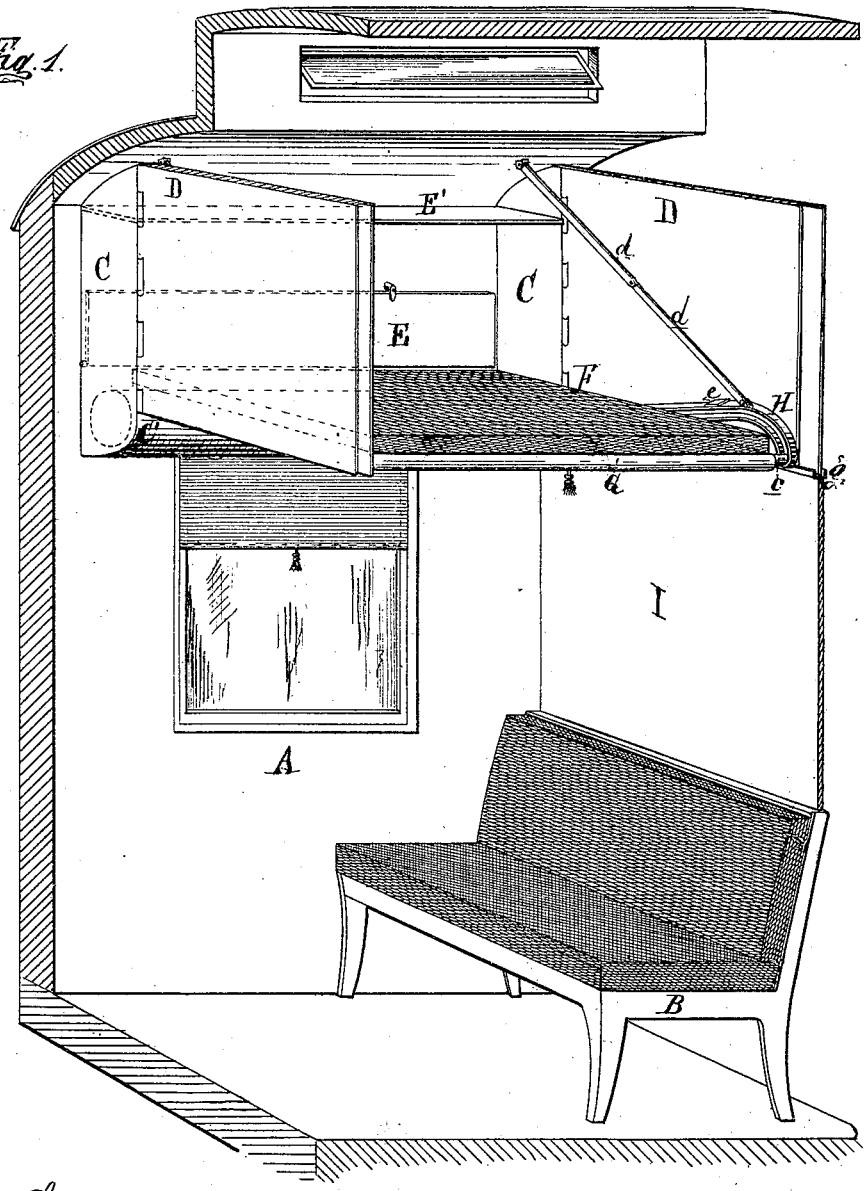
3 Sheets—Sheet 1.

A. E. BARTHEL.

CAR SLEEPING-BERTH.

No. 191,098. Patented May 22, 1877.

Fig. 1.



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CAR SLEEPING-BERTH.

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Fig. 2

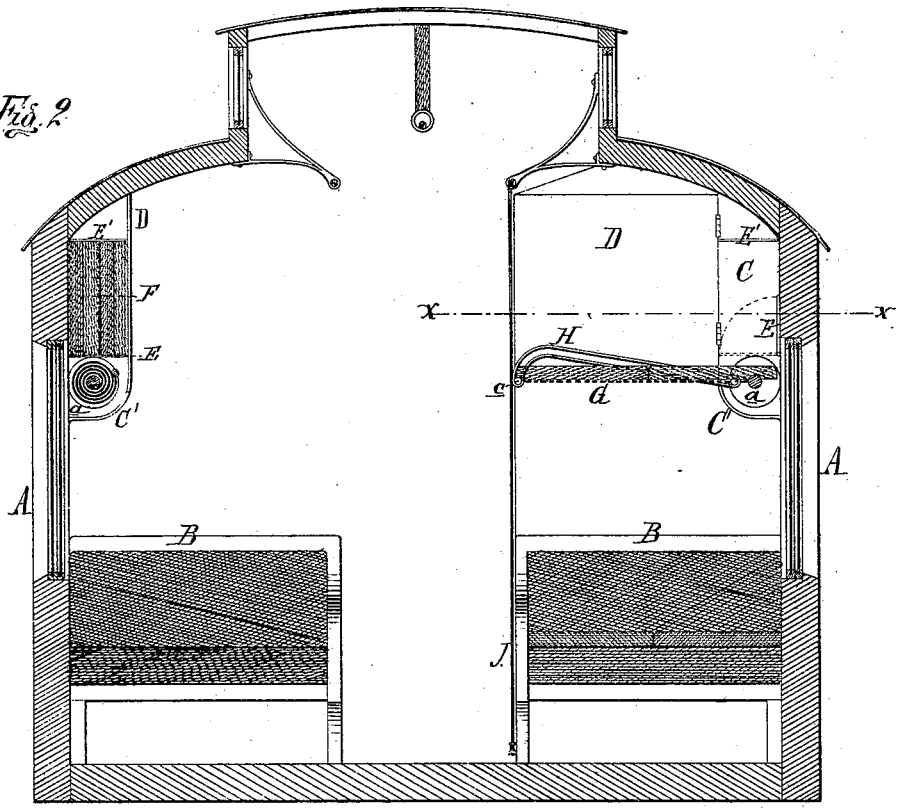


Fig. 3

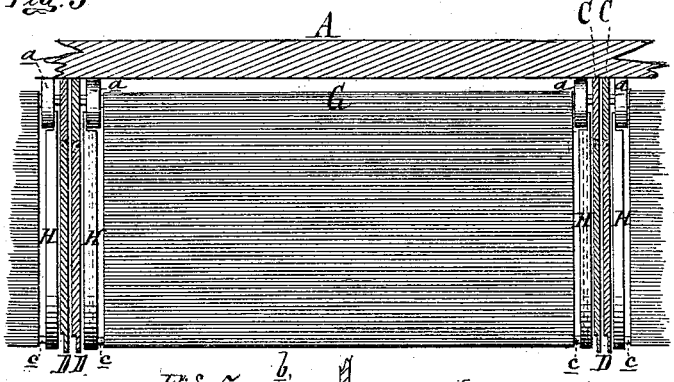


Fig. 4

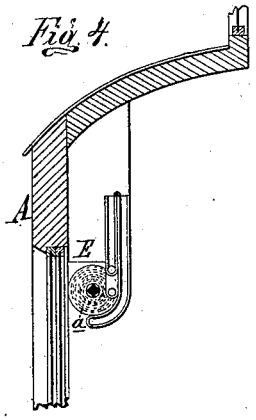
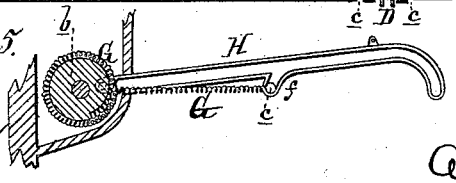


Fig. 5.



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3 Sheets—Sheet 3.

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Fig. 6

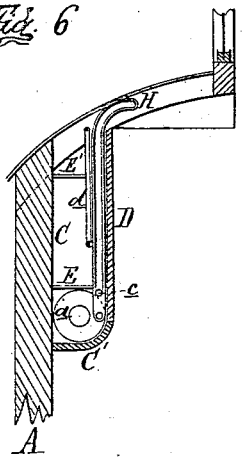


Fig. 7

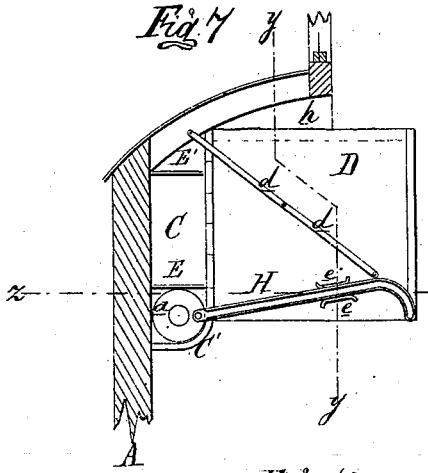


Fig. 8

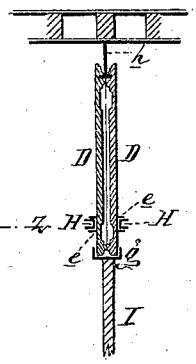


Fig. 9.

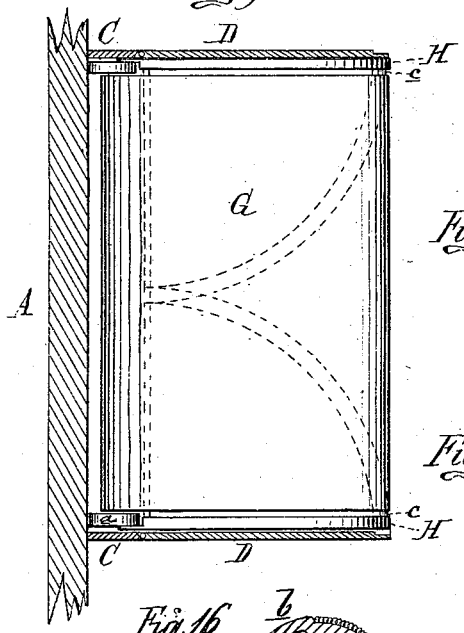


Fig. 10

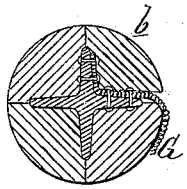


Fig. 11

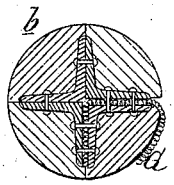


Fig. 12

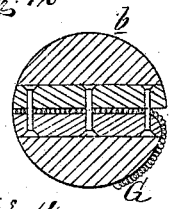


Fig. 13.

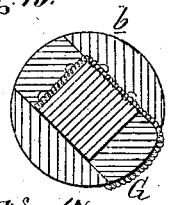


Fig. 14.

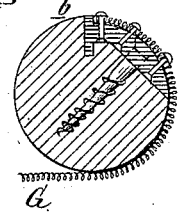


Fig. 15.

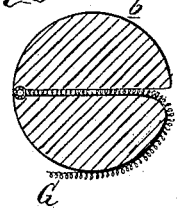
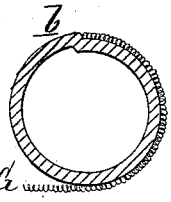


Fig. 16.



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UNITED STATES PATENT OFFICE.

ALBRECHT EDWARD BARTHEL, OF DETROIT, MICHIGAN.

IMPROVEMENT IN CAR SLEEPING-BERTHS.

Specification forming part of Letters Patent No. 191,698, dated May 22, 1877; application filed May 18, 1876.

To all whom it may concern:

Be it known that I, ALBRECHT EDWARD BARTHEL, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Sleeping-Cars, of which the following is a specification:

My invention relates to an improvement in the upper berths of a sleeping-car; and has for its object to construct a berth-bottom of a flexible woven material, which will not require so thick a mattress as has heretofore been necessary to make a comfortable bed, and which berth, with its mattress and bedding, and also those of the lower berth, can be stowed away so as to take up less space and give more clear head-room in the upper part of the car than any other form of berth.

The invention consists in the combination of a flexible woven-wire bottom and folding brackets to support the bed; and, further, in the combination of the rolling berth-bottom and folding brackets with the peculiar locker provided with shelves and doors, all as more fully hereinafter explained.

Figure 1, Sheet 1, is a perspective view of a section of a sleeping-car fitted with my improved upper berth, showing it extended for use with the mattress lying on it. Fig. 2, Sheet 2, is a cross-section of the car, showing the upper berth at one side "made up," and at the other side "folded up." Fig. 3 is a horizontal section at *x x* in the last figure, showing, in plan, the upper berth and portions of the adjoining ones extended. Fig. 4 is a cross-section, showing a modification in the bracket at each end of the berth, showing how it can be folded if hinged at the middle. Fig. 5 is a sectional side elevation of a modification in the solid bracket, showing a notch in it to receive the stretcher-pole of the berth-bottom when the latter is partially rolled up, to facilitate the stowing of the bedding preparatory to closing the berth. Fig. 6, Sheet 3, is a sectional side elevation, showing the position of the bracket when folded up. Fig. 7 is a similar view, showing the positions of the bracket, link, and locker-door when extended. Fig. 8 is a section of the same on the line *y y*. Fig. 9 is a horizontal section of the same at *z z*, showing the berth extended, and in dotted lines the positions of the locker-doors when the berth is closed. Figs. 10 to 16, inclusive, are enlarged cross-sections, showing various constructions of the berth-roller, and methods of securing the berth-bottom thereto.

In the drawing, A represents a portion of the side wall of a sleeping-car, which is fitted with the usual seats B facing each other at each section, and adapted to be converted into a couch, which forms the lower berth of that section.

C C are the end boards of a locker, permanently secured at their back edges to the side and main roof of the car, the one at the head and the other at the foot of each upper berth. To the outer end of each is hinged a door, D, the edges of the said doors overlapping each other at the middle of the section, thus forming a locker adapted to receive and inclose the mattresses and bedding of both upper and lower berths.

In the locker there is a shelf, E, which supports the mattresses F of both berths. These mattresses fold longitudinally, and are placed edge up on the shelf, as seen in Fig. 2. The shelf is made to fold up against the side of the car, as seen in Fig. 1, when the berth is made up, so as to be out of the way of the occupant. In the upper part of the locker there is a stationary shelf, E′, upon which the bedding and pillows are laid.

In the lower part of the locker a spring-case, *a*, is secured to each end board. In these spring-cases the ends of a roller, *b*, are journaled. This roller may be solid, tubular, or built up in sections, as seen in Figs. 10 to 16, and to it is secured the inner edge of a flexible berth-bottom, G, for which I prefer to use what is known as the "woven-wire mattress," whose outer or front edge is secured to a stretcher-pole, *c*.

The spring in each case, *a*, is so coiled about the neck of the roller and secured in the case as that, when the berth-bottom is drawn off or unrolled from the roller, the latter in revolving will put the springs under such tension as that they will roll up the berth-bottom again when it is free.

The roller is concealed from view by the curved bottom board *c′* of the locker, which extends from the lower part of one board or end C to that of the next one.

H, Figs. 1, 2, 3, 6, 7, and 9, is a metal bracket, pivoted at its inner end either on a stud on the outer face of each spring-case, or to the adjacent side of the end board of the locker. This bracket is straight throughout its length, except at the outer end, where it is turned downwardly to form a quarter-circle, and is slotted throughout its length, to receive the projecting end of the stretcher-pole *c*.

When the berth-bottom is rolled up, the stretcher-pole lies in the heels of the slots, and the brackets may be turned vertically upward, the curved upper ends being received in sockets between the carlins of the roof, as seen in Fig. 6, and in this position the locker-doors may be closed in front of them.

To extend the berth, swing open the locker-doors, and draw down the brackets until arrested by the jointed suspension-links *d d*, pivoted thereto and to the roof of the car, as shown in Fig. 7. Each door D is provided on the inside with a socket-plate, *e*, which, when the door is swung toward the bracket, embraces it, and locks it in place.

Then, grasping the edge of the berth-bottom at the stretcher-pole, draw it forward, unrolling it from the roller, until the ends of the pole pass down to the bottom of the curved slots at the outer ends of the brackets. The berth-bottom will now lie in a horizontal plane, ready to receive the mattress, as seen in Figs. 1 and 2.

The berth-bottom being flexible and elastic, conforming readily to the outline of the occupant, but a very thin mattress need be superposed to make a comfortable bed, whereas with a wooden berth-bottom a thick mattress must be used, or springs be interposed. In either case much more space is occupied, reducing correspondingly the clear head-room of the car.

To avoid the necessity of reaching over the entire width of the berth in stowing the mattresses and bedding, I cast each bracket with a pendent offset, *f*, Fig. 5, about midway of its length, into which I carry down a hooked notch from the slot to arrest the stretcher-pole in rolling back the berth-bottom, which enables the porter, in standing upon the seats below, to stow the mattresses and bedding without difficulty.

The brackets may be folded up with the berth-bottom partly drawn out, as in Fig. 5; but, preferably, it should be rolled up, so as to relieve the tension of the box-spring.

Between the backs of the seats of two adjoining sections a vertically-sliding bulk-head, I, is arranged, in such a manner that it can be drawn up to separate each berth-section from the next, and supported in its elevated position by any convenient means. At the top edge, however, it should be provided with a channel-strip, *g*, Fig. 8, to embrace the doors of two adjoining lockers, and thus lock them in position.

If it be desired to separate entirely one upper berth from the next, a small bulk-head, *h*, Fig. 8, may be permanently secured pendent from the car-roof, with a double flange at the lower edge, which will be embraced by the top moldings on the faces of the locker-doors, as shown; but this flange may be omitted.

When not in use the bulk-heads I may be dropped between the seat-backs, or removed and stowed in a closet of the car.

J, Fig. 2, is a curtain, suspended from the usual curtain-rail, to give privacy to each berth-section.

If desired, each spring-case may be fitted with a ratchet and pawl for adjusting the tension of the spring.

I am aware of the invention of J. T. and D. R. Leighton, described in Letters Patent No. 138,587, and do not claim such invention, inasmuch as the Leighton's do not employ a flexible woven-wire bottom to their sleeping-berths as I do, but use instead a sacking bottom, which is objectionable, inasmuch as it lacks elasticity, is liable to become ragged or stretched by use out of proper form, and serves as a convenient harbor for vermin, and, also, because the Leighton's do not employ folding brackets as I do, which, when extended, support the bottom as a bed, and from the head and foot of the same, and when not in such use fold up and inclose a locker.

I am also aware of the invention of J. W. Read, described in Letters Patent No 65,272, and do not claim such invention, inasmuch as Read does not employ the flexible woven-wire bottom, or the folding brackets, as I do.

What I claim as my invention is—

1. In combination in a sleeping-car, and constituting the upper berth thereof, a flexible woven-wire bottom and folding brackets, which, when extended, support the bottom in use as a bed, and form the head and foot of the bed, substantially as described.

2. In a sleeping-car, substantially as described, the locker C C C′, provided with the shelves E E′ and doors D D, in combination with the rolling berth-bottom and folding brackets, substantially as and for the purpose set forth.

ALBRECHT EDWARD BARTHEL.

Witnesses:
JAS. M. WRIGHT,
HENRY NUTSON.