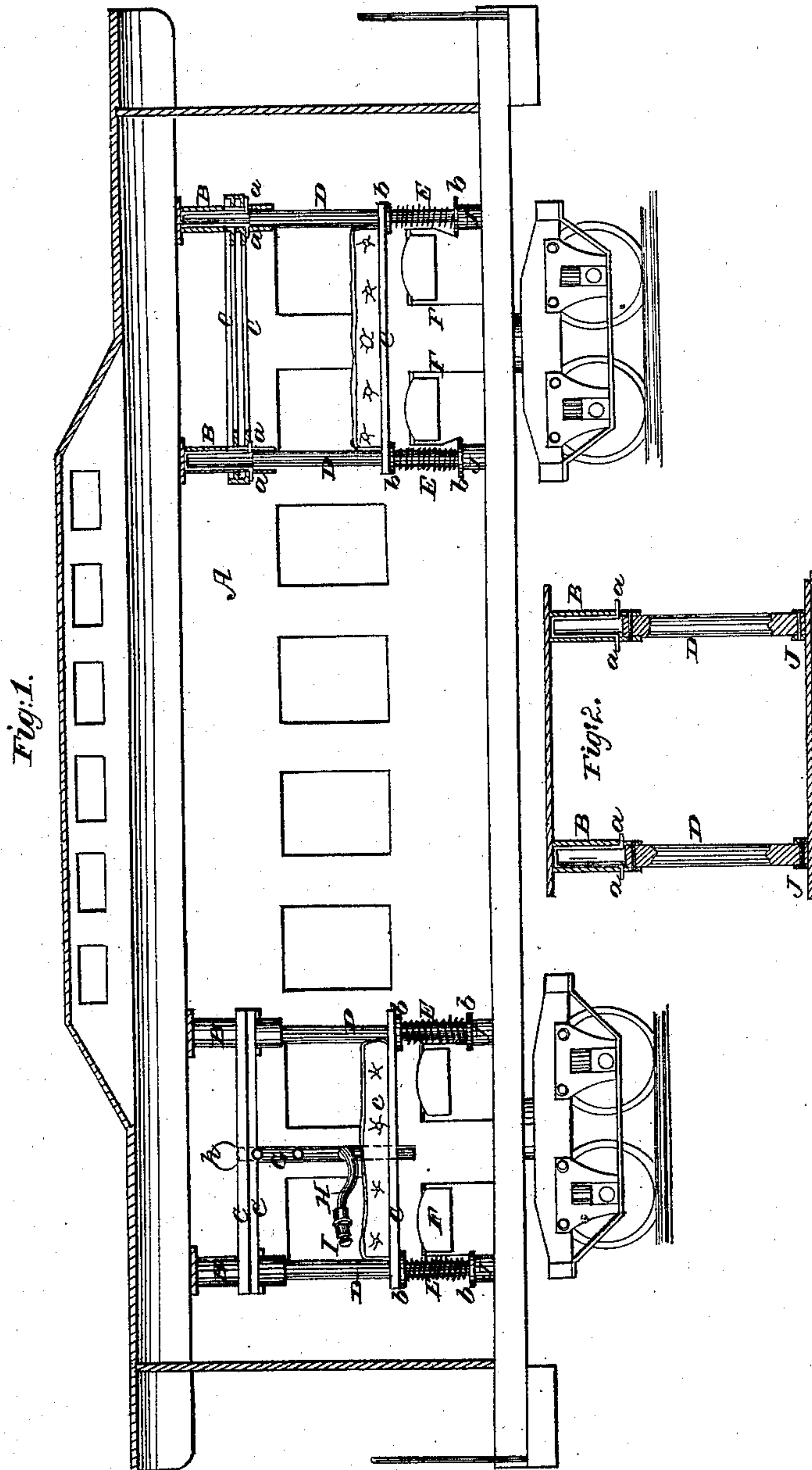


C. T. HARVEY.  
Car Seat and Couch.

No. 48,393.

Patented June 27, 1865.



Witnesses,

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Gustave Dietrich

Inventor,

Charles Thompson Harvey

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Fig. 4.

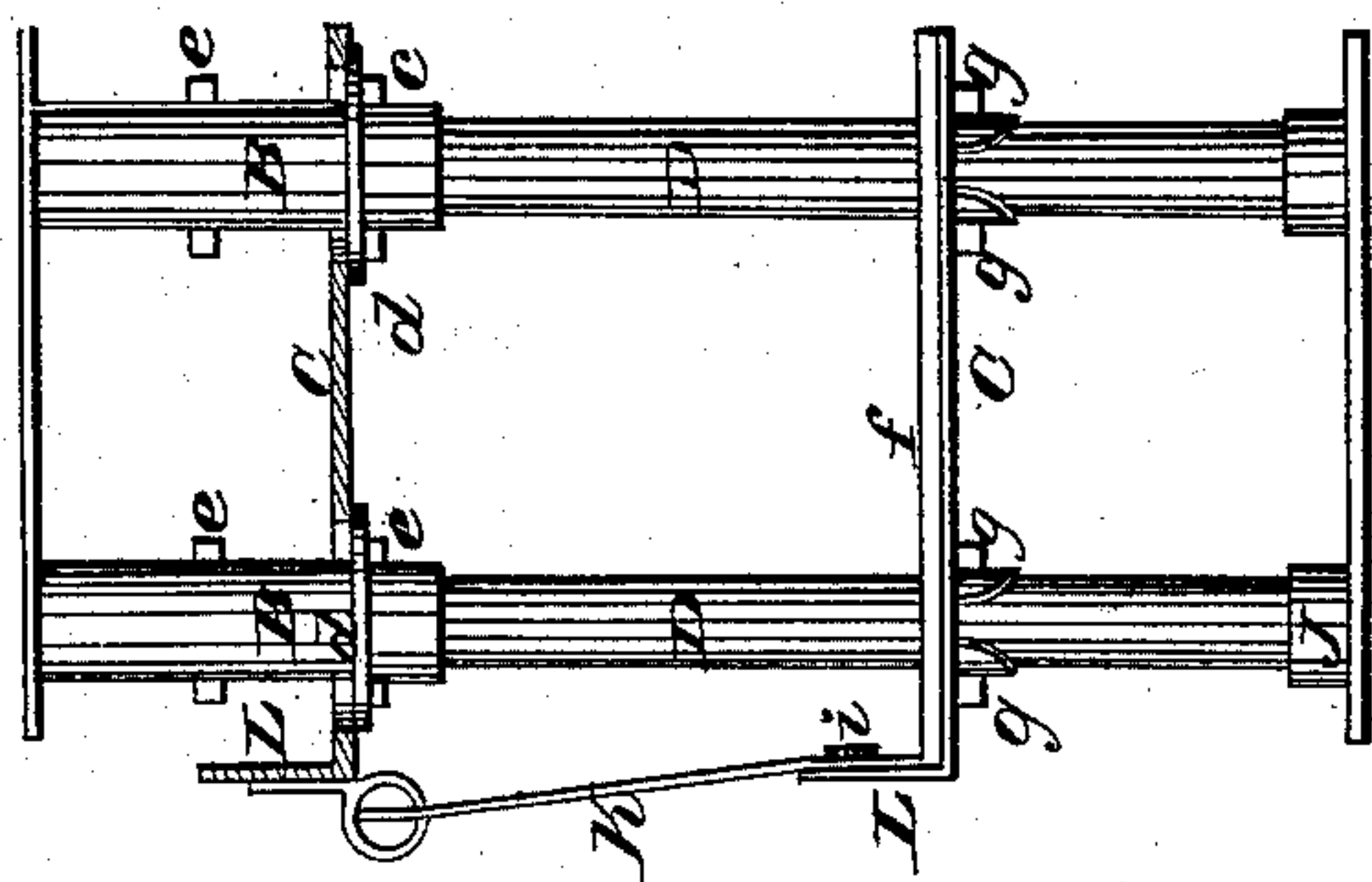


Fig. 3.

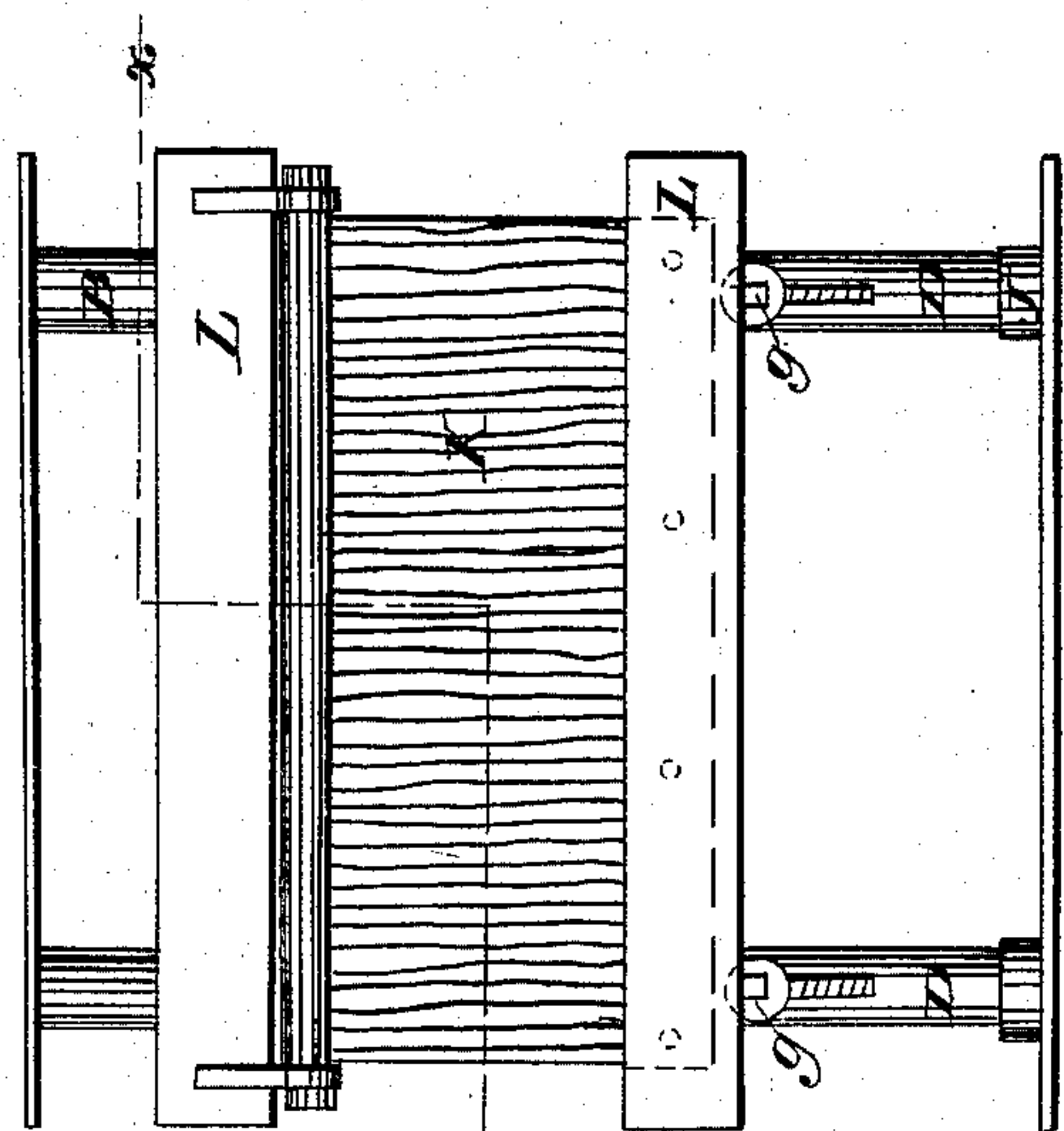
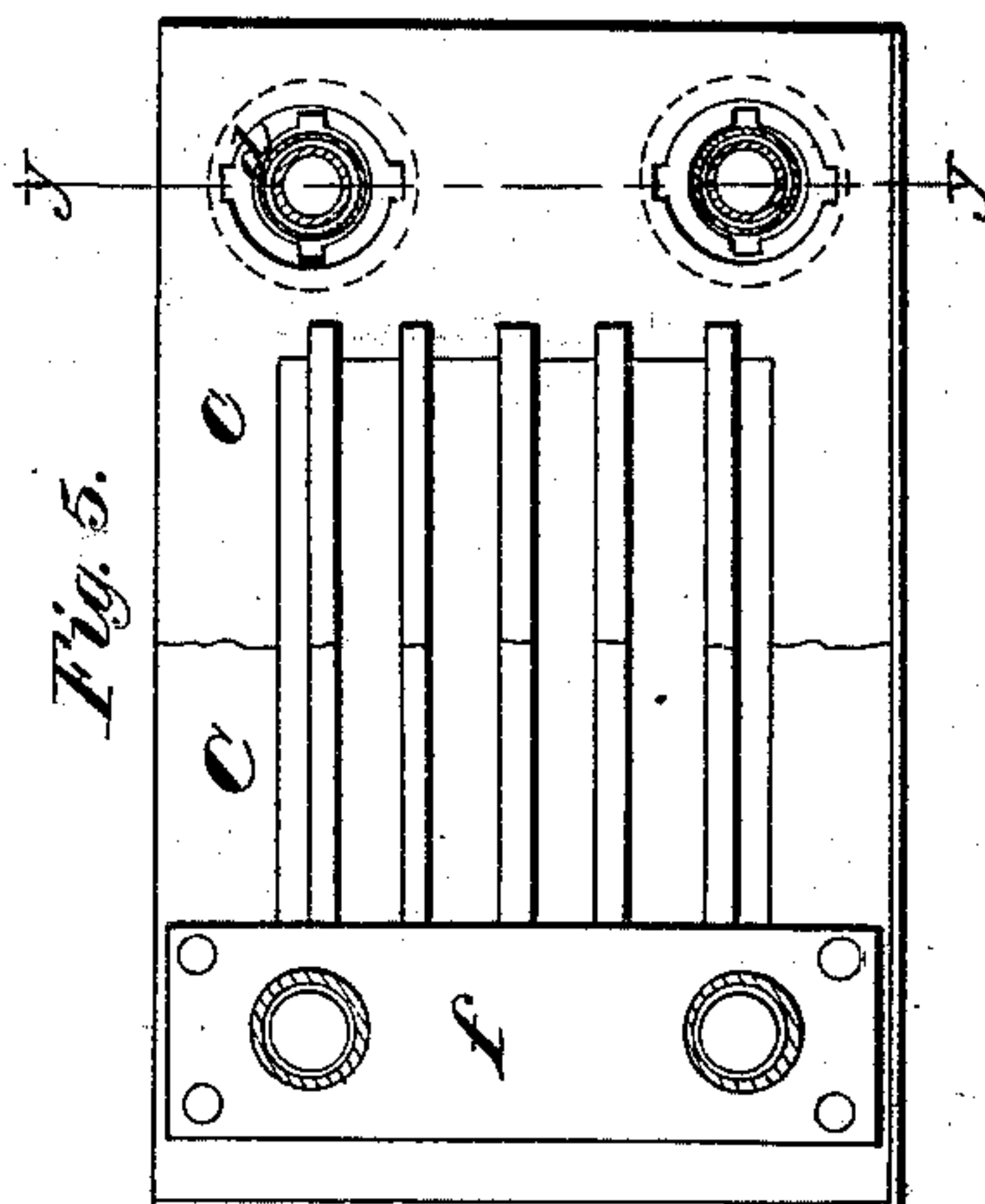


Fig. 5.



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# UNITED STATES PATENT OFFICE.

CHARLES THOMPSON HARVEY, OF NEW YORK, N. Y.

## IMPROVEMENT IN SLEEPING-CARS.

Specification forming part of Letters Patent No. 48,393, dated June 27, 1865.

*To all whom it may concern:*

Be it known that I, C. THOMPSON HARVEY, of the city, county, and State of New York, have invented a new and useful Improvement in Sleeping-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet No. 1, is a side elevation of the interior of a car to which my improvement is applied. Fig. 2 is a detailed view, showing a modification of the standards which support the berths. Fig. 3, Sheet No. 2, is a side view of a berth with a curtain applied thereto. Fig. 4 is a cross-section taken on the line *y*, Fig. 5; Fig. 5, a plan of a section, taken on the bent line *x* of Fig. 3.

Similar letters of reference indicate corresponding parts.

The object of this invention is to produce a sleeping-car which shall be well ventilated, each berth being supplied, if desirable, with independent appliances for that purpose.

The invention consists in an improved sleeping-car which embodies several new features, among which are the following, to wit: a complete privacy and isolation of the several berths; also, giving each berth an elastic support independent of the springs of the car-body of its trucks; also, preserving the berths from the shocks of violent jars in horizontal directions, and also from noises which naturally result from such shocks; also, a peculiar construction and arrangement of the standards and other parts which pertain to the berths, whereby the standards can be removed and the berths themselves be nested together, the result being that the interior of the car is then left entirely free and unobstructed throughout its whole area, so that all its seats can be used by passengers in the ordinary way; also, other features hereinafter set forth.

Among other disadvantages and objections which are found in the styles of railroad sleeping-cars at present in use are imperfect ventilation, noisiness, uncomfortable couches, and imperfect isolation of berths from the passageway. Another disadvantage of the present mode of constructing them is that a large part

of a car is permanently taken up by the fixtures and berths, even while it is not being used as a sleeping-car, whereby a great part of its sitting capacity is destroyed and the revenue derived from it when used as a regular day-car is much diminished. My object is to remove these disadvantages and objections and to produce a sleeping-car which shall be comfortable and convenient to the passengers and at the same time healthful by reason of ample ventilation, and which shall also be capable of being converted into a day passenger-car, all of whose seats and floor-area are unobstructed.

A designates a car, in connection with which I propose to illustrate and explain my invention.

The letters C designate berths with spring-bottoms composed of slats of metal, wood, or other material which is capable of being arranged or made into an elastic bed or surface. This elastic bottom is covered by a mattress, *c*, to secure greater ease and comfort, and the mattress may be fixed to the berth or removable, as may be desired. The berths are guided upon and held in place by standards D, which reach from the floor of the car up to sockets B, into which the upper ends of the standards are inserted. The feet of the standards are held in shallow sockets J, which are placed on the floor between adjacent seats, or they may be received and held in shallow recesses sunken in the floor. The sockets B extend downward from the roof of the car, or from cross-pieces in its upper part. There are four sockets and four standards for each series of berths, and the corners of each berth are perforated to allow them to be moved up and down along the standards D and sockets B. Each side of a car is to be provided with the upper and lower sockets and the standards, the distances of the several sockets and standards from each other being equal to the distances apart of the perforated corners of the berths, both in lateral and longitudinal directions. The upper sockets are provided with spring-hooks *a a*, which swing outward through slits made in their opposite sides. The object of these hooks is to detain and hold up the cots or berths when they are nested or retired in the upper part of the car, as seen of two of them in the examples given in Fig. 1. These hooks may be jointed, so as



to be capable of yielding before the cots when they are moved upward, instead of being constructed as shown in the drawings.

In Sheet 2 I have shown another way of holding up the cots on the sockets B, to wit: a circular plate, *d*, on each socket, free to be revolved and moved up and down thereon, and resting on pins which project radially from the sockets. The plates are slotted on their inner circumferences, so that when they are turned to bring their slots into articulation with the pins they can pass the latter. In this way the cots may be lowered, and when the plates rest on the pins they serve to hold up the cots, which always rest on the plates, there being a plate for each corner of each cot or berth. When the cots or berths are lowered to their positions on the standards they rest on circular plate-washers *b*, connected to the upper ends or resting on the tops of springs E, whose lower ends rest on other washers, *b*. These springs encircle the standards in the example given in Fig. 1, but they may be inclosed within the standards, if the latter are hollow, or springs of other forms may be used.

Instead of employing rigid standards to guide and support the cots I can use elastic pillars, as shown in Fig. 2, where are seen pillars of india-rubber. These are simply secured to the sockets B and J above and below, and by having pins or arms protruding from their sides for the corners of the berths to rest upon I secure an elastic bearing for the latter without any other device.

Each series of berths may consist of two, three, or more, according to the height of the car, and the upper berth of the series may be suspended on elastic bearings from the sockets B.

In order to ventilate the berths I run an air-tube, G, vertically along the sides of the car or within its casing, one for each series of berths, one end of the air-tube communicating with a tube, *h*, which opens on the outside of the car. Each of the tubes G may have its separate inlet-tube *h*, or there may be a tube, *h*, common to all on the same side of the car. The vertical tube G has as many perforations in its sides as there are berths, and the perforations occur at such distances as bring them respectively in the intervals between adjacent berths when in position for use. These perforations may be provided with flexible tubes H of a convenient length to reach to all parts of a berth, and the free ends of the tubes may be provided with air-valves I, which can be closed and opened by the occupant of a berth at pleasure. The vertical tubes can be run up so as to come opposite any part of the berths instead of at their middle parts, as here shown, and the perforations of the tubes may themselves be provided with registers, and the flexible tubes and valves may then be dispensed with.

In Fig. 4, Sheet 2, I have shown springs confined within hollow standards D, the berths being sustained on the springs by means of arms

*g* extending through the standards and moving up and down thereon by means of slots, as seen in Fig. 3.

In order to isolate each berth from each other and from the common passage-way, and yet allow each berth to have free and independent vibration on the springs which support them, I make use of elastic curtains L, whose upper edge is permanently fastened to the rail L of one berth, and its lower edge carried down to the inside of the rail L of the berth next below, where it may be fastened onto hooks *i*, which are within the control only of the occupant of the berth. These curtains are to be elastic, and for this object elastic shirred stuff may be used, or springs may be applied to a roller, so as to wind up the slack of the curtain. I have shown a curtain only on the side of a berth, but the foot and head can be isolated by the same means. This arrangement permits each berth to move up and down on the standards, while its privacy is effectually preserved.

Since the oscillations of the cots or berths will bring the sides of their perforations with more or less violence against the standards D and sockets B, which, when they are made of hard and rigid material, such as metal and wood, will produce unpleasant jars and noise, I have devised a means of preventing these effects by fixing diaphragms *f* of rubber on the berths at their ends, or at their corners, through which the standards and sockets are passed. A convenient modification of this device is to line the openings in the corners of the berths with rubber or other elastic material, which will deaden the sound of concussions, or the sockets or standards themselves may be wholly or partly covered with rings of such material.

When the berths are to be put aside they are simply pushed up above the hooks *a*, when the standards D can be removed and laid away, and the seats F are immediately ready for use.

The device here described for ventilation may be applied also to berths of steamboats and other vessels, and the other devices are generally applicable to vessels as well as to fixed structures.

I claim as new and desire to secure by Letters Patent—

1. The adjustable standards D, whether solid or hollow, either surrounded by, or, if hollow, inclosing within spiral or other form of springs, combined with the berth of a sleeping-car, in the manner and for the purpose herein set forth.

2. The combination of the air-tube G, tube *h*, flexible tubes H, and air-valves I, when used, in connection with the berth of a sleeping-car, for the purposes of ventilation, in the manner and for the purposes herein described.

3. Suspending and nesting the berths upon the upper sockets or upon the parts which constitute the upper portions of the standard of the berths when the berths are out of use, substantially as described.



4. Supporting the berths upon adjustable elastic bearings when in use, as shown at D in Fig. 2, substantially as described.

5. Preventing and controlling violent oscillations and noise from the movements of the berths on their standards and sockets by means of elastic diaphragms or rings, when combined with the bottom of the berth, substantially as described.

6. Applying elastic curtains to adjacent

berths, so that the same will yield and conform to the motion of the supporting-springs thereof, so as to isolate the berths from the common passage-way and from each other, substantially as described.

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