

(No Model.)

2 Sheets—Sheet 1.

T. T. WOODRUFF.
Sleeping Car.

No. 238,470.

Patented March 1, 1881.

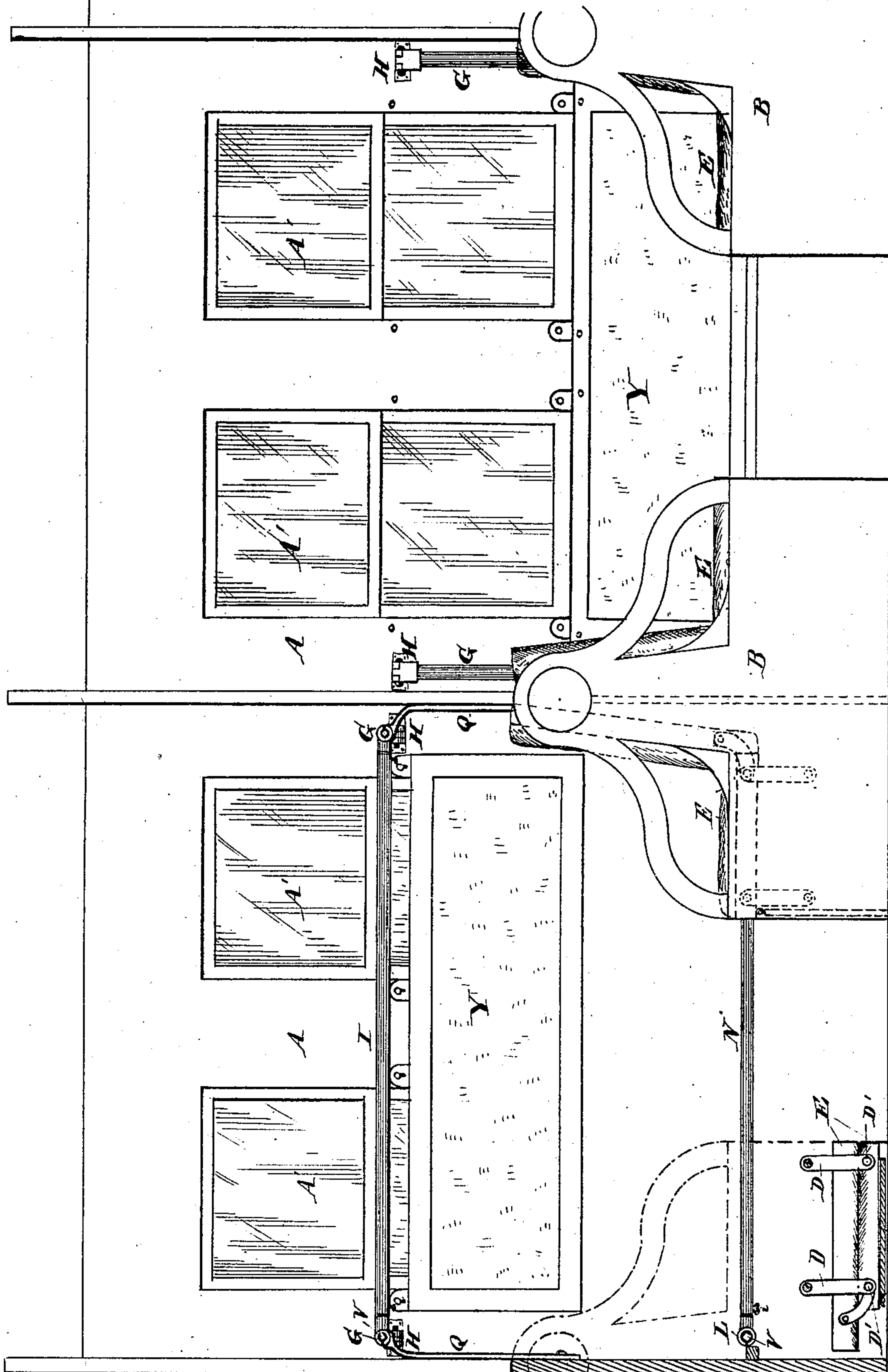


Fig. 1

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L. J. Mator.

Inventor
Theodore T. Woodruff
By his atty.

Wm. H. Woodruff

(No Model.)

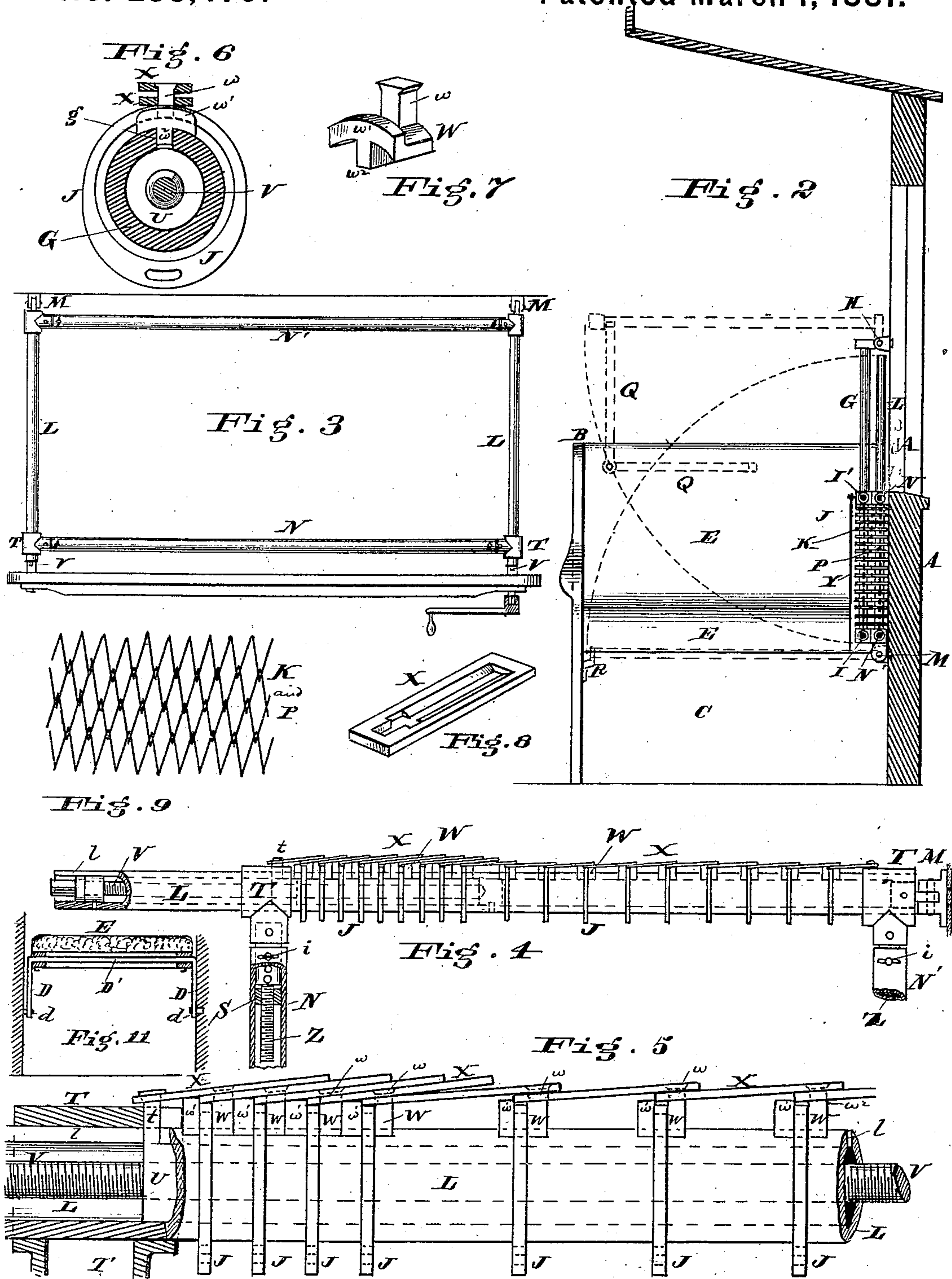
T. T. WOODRUFF.

2 Sheets—Sheet 2.

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L. J. Matos.

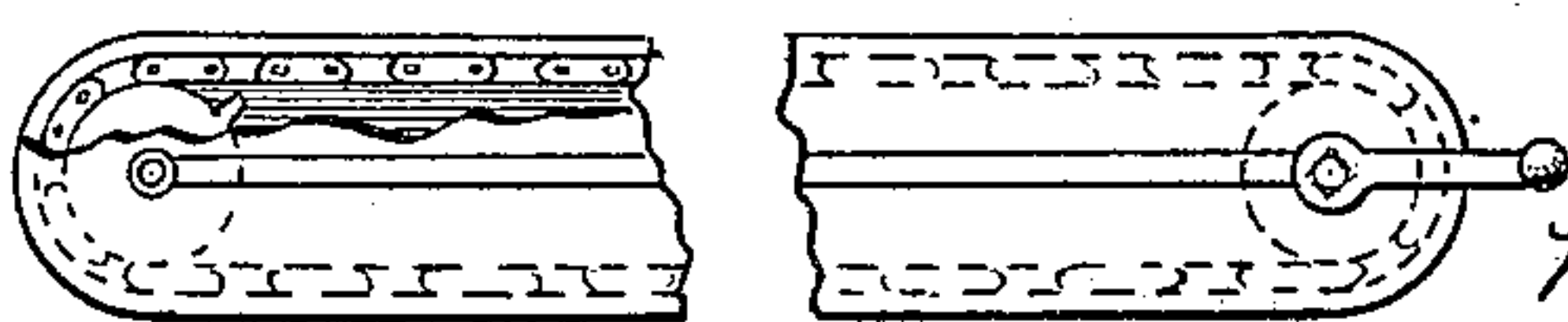


Fig. 10

Inventor
Theodore Woodruff
By his atty

Theodore Woodruff

UNITED STATES PATENT OFFICE.

THEODORE T. WOODRUFF, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
TO ELIZA M. WOODRUFF, OF SAME PLACE.

SLEEPING-CAR.

SPECIFICATION forming part of Letters Patent No. 238,470, dated March 1, 1881.

Application filed December 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, THEODORE T. WOODRUFF, of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have
5 invented an Improvement in Sleeping-Cars, of which the following is a specification.

My invention relates to railroad sleeping-coaches in general; and it consists in a novel
10 construction of the mattress and its supporting-frame, whereby no part thereof is overhead during the day; further, in making the upper and lower berths substantially the same in every material part, and entirely doing
15 away with the seat-cushions as the mattress of the lower berth, and also dispensing with the usual box upper berth, and in lieu thereof substituting two coiled-wire mattresses having wire interwoven and lying lengthwise with the mattress.

20 The object of my invention is to so construct the berths of a sleeping-car that there shall be nothing in the way of foul air, fumes, &c., absorbed by the mattresses of said berths; and, further, in substituting for the box arrangement of the upper berth used in the Pull-
25 man and Wagner cars, and which is located overhead, an improved construction of the upper berth, which shall leave the whole of the upper part of the car entirely open; and, lastly;
30 to provide a spring-mattress of novel construction which shall be fully aired, and shall in no way form a receptacle for dirt, dust, &c.

In the drawings, Figure 1 is a side elevation of one side of a portion of the car, and
35 shows the mattresses in a position for night and also for day. Fig. 2 is a cross-section of same on line *xx*, showing mattresses in day position, and dotted in position taken at night. Fig. 3 is a plan view of mattress-frame. Fig.
40 4 is a plan of one of the end bars, showing method of stretching the mattress. Fig. 5 is an enlarged view of a portion of Fig. 4. Fig. 6 is a cross-section of an end bar to the upper berth. Fig. 7 is a perspective view of one of
45 the sliding blocks. Fig. 8 is a perspective view of one of the links. Fig. 9 is a plan of the interwoven coiled-wire spring-mattress in a stretched condition. Fig. 10 is a side elevation, with part in section, of mechanism to
50 stretch the mattress on both end bars uni-

formly and at the same time. Fig. 11 is a longitudinal section through one of the seats.

A is the body of the car, and A' its windows. B are the seat-frames. E E are the cushions of the seats and backs. D are supporting-links, 55 which are secured at one end to the seat-frames B, and at the other to rods D', to which they are riveted, which rods pass through bearings in the wood-work of the cushions, as shown in Fig. 11, and swing, as in the case of parallel 60 bars, so that when the cushion-backs are folded down upon the cushion-seats, to which they are hinged, the whole may be swung down to the floor, as shown in Fig. 1. The front or
65 riser board, C, is hinged to and slides under the seat-cushions, and is thereby placed out of the way.

Secured about half-way up the side of the car, and, if desired, free to be adjusted later- 70 ally, are brackets H, provided with a projection which slides in a plate secured to the side of the car, and to which are hinged the end bars, G G. Secured to these end bars are the bars I I' and the rings J, or their equivalent, as hereinafter set forth. The bar I is fixed upon 75 the end of either end bar, G, by means of eyed T-pieces, but is free to slide to and from the brackets H, as shown in Figs. 2, 3, 4, and 5; but the bar I' is firmly secured to the end bars, and does not slide thereon. 80

Secured to the rings J and the bars I I' are the interwoven coiled-wire springs which make up the mattress K. By the construction of this condensable mattress, as shown in Fig. 9, it is evident that the coils of wire forming it can be 85 pressed close together, so as to take up only one-half the room in width, as shown in Fig. 2.

The lower berth and mattress is constructed in substantially the same manner as that described above, except that the bar N is made 90 rigid upon the end bars, L, close to their hinged joints, and the bar N is free to slide to the other end of same to stretch the mattress. The end bars, L, are hinged at M.

Pivoted to the back of the seat-frames B, and 95 behind the cushions, are the supports Q for the upper mattress-frame, and R for the lower mattress-frame.

To stretch the mattress lengthwise, and which is only done once in a great while and when 100

it becomes slack, the bars I I' or N N' are provided with eyed bolts T on their ends, and rigidly secured to the end bars in the case of I and N', but which are free to slide in the case of I' and N, and which bolts, on opposite ends of the bars I I' and N N', are provided with opposite lead of threads, or right and left hand screw-threads, Z, and work in nuts S on the bars. By turning or rolling the bars the mattress can be either stretched or slackened and secured in such condition by pins *i*.

The end bars, L, are hollow, and are slotted at *l* to their full length, or only part of it, upon their outer sides, and are internally provided with tension-screws V, having square heads, which project from the ends of the bars, and upon which screw-nuts U work, which nuts are provided with pins *t*, which slide in the slots *l*. The rings J may form part of, or be separate from, the sliding blocks W, which are provided with pins *w*, shoulders *w'*, and legs *w''*, which latter work in slots *l*. The blocks W are connected together to the pins *t* and to the bars L, near their hinges, by slotted links X, which are kept from displacement by flaring heads to the pins *t* and *w*, and regulate the distribution of the mattress over the end bars. The construction of this part of the upper berth is the same as that just described, except that the end link, which was fastened near the hinge, is secured near the end, and the links and mattress stretch in the opposite direction.

Mechanism to stretch the mattress laterally, by turning the screws V V on both ends at once and uniformly, is shown in Fig. 10, and as applied in Fig. 3, in which a chain passes over two pulleys or sprocket-wheels on either end of a frame, the hubs of which have sockets with square holes, which fit over the square heads of the screws V. By turning a crank secured to one wheel the screws may be rotated in either direction and the mattress stretched or condensed.

The operation is as follows: The cushion-backs are turned over upon the cushion-seats, and the riser-board is slid under the latter, and the whole is swung down to the floor, as shown in Fig. 1. Then the upper berth-frame and its mattress K is lifted up and held upon supports Q, and the bar of same pressed toward the windows by the screws V and nuts U, spreading the mattress, and is held there by the screw. Then the lower mattress, P, and its frame is swung down and rested upon supports R, and the bar N is drawn out to the ends of the end bars by screws V and nuts U, and secured there by the same. Light comforts or thin mattresses are now placed on the stretched wire mattresses and the beds are made up. The thin mattresses and pillows are stored during the day-time under the seats. The object of making the mattress compressible sidewise is for the purpose of putting it all below the windows, as shown in Figs. 1 and 2, during the day-time. When closed up during the day-time the wire mattresses are hid-

den by a cover, Y, which is supported over them from pins by tabs, as shown in Figs. 1 and 2. During the night it can be hung up, as shown in the left section of Fig. 1, and then acts as a curtain.

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

1. In a sleeping-car, a condensable mattress hinged to the side of the car, and composed of interwoven coiled wire, said mattress being condensable or extensible in the same plane, in contradistinction to being rolled up, substantially as and for the purpose specified.

2. In a sleeping-car, the combination of brackets H, end bars, G, adjustable bars I I', one of which is free to slide on the end bars, and condensable interwoven coiled-wire mattress K, substantially as and for the purpose specified.

3. In a sleeping-car, the combination of a hinged support for the cushions, whereby they can be let down upon the floor and lower berth, condensable mattress P, supported upon hinged end bars, L L, and adjustable bars N N', substantially as and for the purpose specified.

4. In a sleeping-car, two condensable interwoven coiled-spring mattresses and their supporting-bars, in combination with cover Y, substantially as and for the purpose specified.

5. In a sleeping-car mattress-frame, the end bars, G, in combination with eyebolt T, having right and left hand screw-threads Z, as described, those upon one end bar being right-handed and those upon the other left-handed, and bars I I', provided with nuts S, having corresponding threads, substantially as and for the purpose specified.

6. In a mattress for sleeping-cars, the combination of end bars, G, rigid adjustable bar I, loose adjustable bar I', rings J, and condensable interwoven coiled-wire mattress K, substantially as and for the purpose specified.

7. In a mattress for sleeping-cars, the combination of end bars, G, provided with slots *g*, screws V, nuts U, links X, blocks W, rings J, rigid adjustable bar I, loose adjustable bar I', and condensable interwoven coiled-wire mattress K, substantially as and for the purpose specified.

8. In a berth for sleeping-cars, the combination of an interwoven coiled-wire mattress, condensable in the same plane as when extended, rings J, end bars, G, provided with slots or grooves *g*, blocks W, and links X, or their equivalent, to regulate the spreading of the mattress, and yet allow it to be condensed without winding upon a roller, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

THEODORE T. WOODRUFF.

Witnesses:

ROBT. A. CAVIN,

EDWARD J. PAXSON,