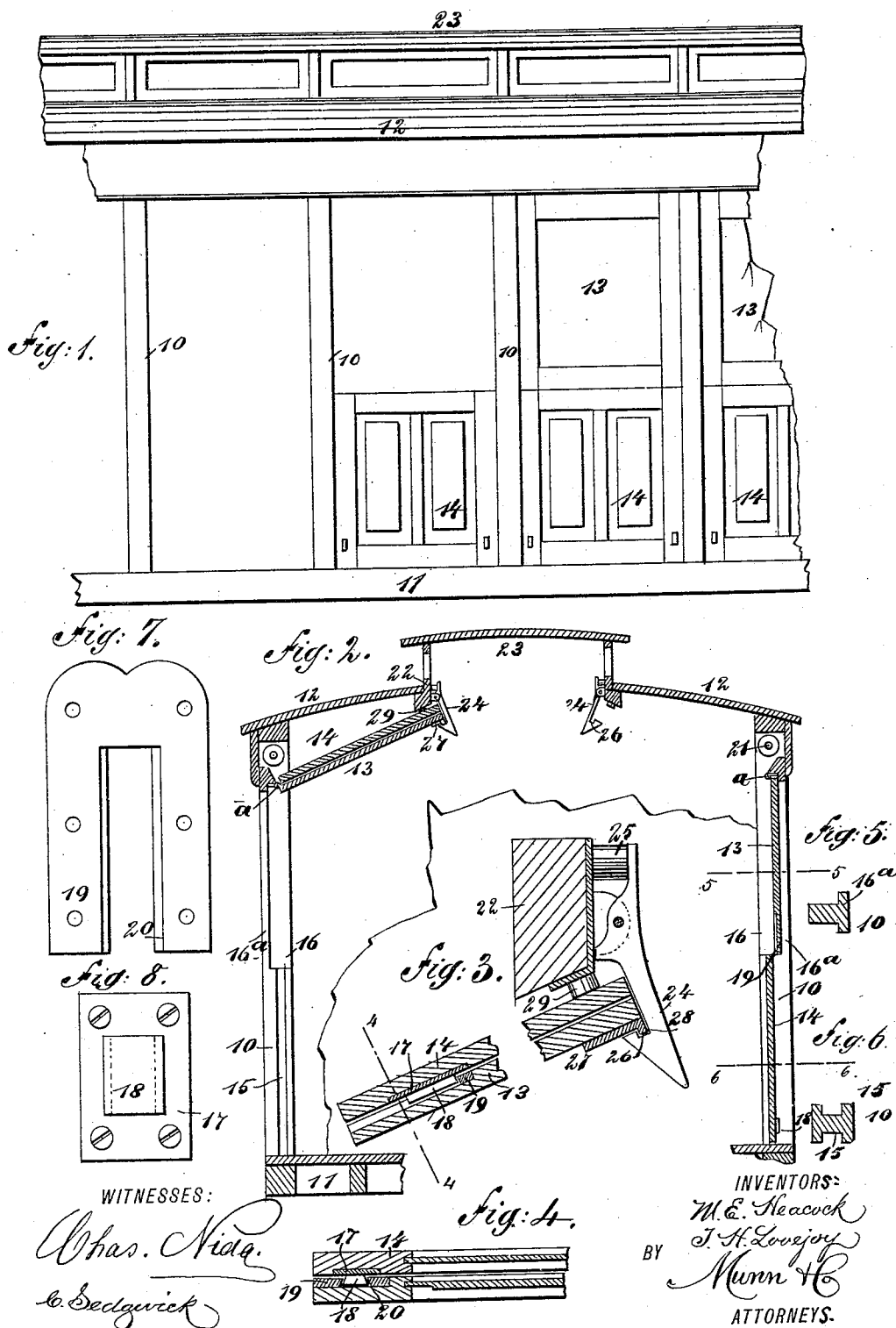


(No Model.)

M. E. HEACOCK & T. H. LOVEJOY.
CAR.

No. 470,125.

Patented Mar. 1, 1892.



UNITED STATES PATENT OFFICE.

MANSEL E. HEACOCK AND THOMAS H. LOVEJOY, OF PORTLAND, OREGON,
ASSIGNORS TO THE COLUMBIA CAR AND TOOL WORKS, OF OREGON.

CAR.

SPECIFICATION forming part of Letters Patent No. 470,125, dated March 1, 1892.

Application filed August 21, 1891. Serial No. 403,293. (No model.)

To all whom it may concern:

Be it known that we, MANSEL ELMORE HEACOCK and THOMAS H. LOVEJOY, of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in the Construction of Cars, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in the construction of cars, and has for its object to provide a means whereby a car-body may be conveniently and expeditiously converted from an open car to a closed car, and vice versa; and a further object of the invention is to so construct the body of the car that it will be simple, economic, and durable.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a partial side elevation of a car-body constructed in accordance with our invention. Fig. 2 is a vertical transverse section through the car-body. Fig. 3 is an enlarged section through a portion of the base-beam of the clear story of the car and two panels comprising a section, which panels are illustrated as connected with the said beam. Fig. 4 is a section taken practically on the line 4 4 of Fig. 3. Fig. 5 is a transverse section through one of the vertical posts of the car, taken upon the line 5 5 of Fig. 2. Fig. 6 is also a section through one of the posts, taken, however, on the line 6 6 of Fig. 2; and Figs. 7 and 8 are enlarged detail views of the devices for connecting the panels of the sections when the car-body is to be an open structure.

The ends of the car may be constructed in any approved manner, as the invention lies, primarily, in the formation of the sides of the car.

The side of a car consists, essentially, of a series of upright posts 10, arranged at suitable distances, preferably equidistant apart, which posts extend from the floor 11 of the car to the roof 12 thereof. The space between the

posts we denominate as a "section" of the car, and each section comprises a window 13, forming the upper portion of the section, and a panel 14, forming the lower portion thereof. Each intermediate post, as best shown in Fig. 2 and in the cross-sections, Figs. 5 and 6, is provided in each side with a vertical groove or slideway 15, extending from the floor-line to a point at or near the center, and at the point at which the grooves 15 terminate the opposite side of each post is provided with a recess 16, which may extend nearly to the upper ends of the posts or to the roof, the recesses 16 being produced in the inner edges of the posts, extending through said edges, whereby near the outer edges vertical shoulders 16^a are obtained. Thus the upper recessed portion of the intermediate posts is somewhat T-shaped in cross-section, as illustrated in Fig. 5, and the lower grooved portion of the posts represents in cross-section substantially the letter H, as shown in Fig. 6.

The corner-posts of the car-body are grooved and recessed in their inner side faces only. The panels 14 may be of any suitable or approved construction or of any design which fancy may dictate, and the said panels are adapted to slide in the grooves 15 of the posts and are capable of sliding also upward in the recesses 16, as the recesses are immediately above the grooves. Each panel at or near the lower corners thereof is provided with an attached plate 17, countersunk in its outer face, which plates carry lugs 18, as shown in detail in Fig. 8, the said lugs being essentially dovetail in general contour, as illustrated in Fig. 4, and as the plates are countersunk in the panels the lugs only extend beyond the faces thereof.

The windows 13 are hinged at their upper ends, preferably to a cross-bar between the posts, as illustrated at *a* in Fig. 2, and upon the inner face of each window at each corner a plate 19 is secured, the said plate being provided with a dovetail slot 20, registering with a recess in the window-frame, to which the plate is secured. The plates 19 are attached to the windows 13 in such manner that when the panels are raised sufficiently to bring the lower ends of the panels flush with the lower ends of the windows the lugs 18 of the panels will have entered the dovetail re-

cesses 20 of the plates 19 a sufficient distance to secure a locking connection between the panels and the windows, as is best shown in Fig. 3. When the windows are let down to their closed position, the sides of their outer faces engage with the shoulders 16^a upon the posts, and their lower ends rest upon the base walls of the recesses in advance of the grooves 16, as shown at the right in Fig. 2. Curtains 21, of any approved pattern, may be placed upon suitable rollers located above the windows back of the letter-board or the curtains may be otherwise secured.

Upon the inner face of the lower beams 22 of the clear story 23 of the car at proper intervals apart latches 24 are fulcrumed, the lower ends of which latches are normally pressed outward in the direction of the sides of the car by springs 25, which springs ordinarily consist of rubber blocks secured to the beams 22 and having a bearing against the upper ends of the latches. The heads of the latches are located at their lower ends, and in each head a recess 26 is preferably produced. The latches are so located upon the lower beams of the clear story that when the windows are raised upward and forward they will engage with the central lower surfaces of the windows, and at this point upon each window a plate 27 is ordinarily secured, provided with a lip 28, which lips are adapted to enter the recesses 26 in the latches, and elastic buffer-blocks 29 are attached to the under surfaces of the beams of the clear story adapted to have bearing upon the panels 14 when carried upward with the windows, as will be hereinafter described.

In operation, if the car has been used as a closed car and it is desired to convert the same into an open car, the lower panel of each section is carried upward until it locks with the sash immediately above it, and when this locking connection is made the attached panel and sash are carried upward and inward to an engagement with a latch 24, as shown in Fig. 2, and the said latches will maintain the connected panels and sashes in an elevated position, (shown at the left in Fig. 2,) and all of the sections may be made open sections, as illustrated at the extreme left in Fig. 1. If it is desired, only one sash is carried upward to an engagement with the latch, the panel remaining in its normal position, as shown in the section next to the left-hand section, Fig. 1. The remaining sections in said figure are represented as closed.

We desire it to be distinctly understood that the ends of the car may be constructed in like manner as the sides, if found desirable. Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In the construction of cars, a series of sliding panels, a series of sashes above the panels pivotally connected to the car structure at their upper ends to separately swing inward and upward, and latch devices whereby when the panels are carried upward to an engagement with the sashes the two are locked together, substantially as described.

2. In the construction of cars, the combination, with the body thereof having its sides formed of a series of spaced upright posts extending from top to bottom, of panels held to slide between the lower portions of the posts, sashes pivoted at their upper ends between the upper portions of the posts, the said sashes being adapted to separately swing inward and upward, locking devices adapted to unite the panels with the sashes when the panels are slid upward, and latch devices contained in the car and adapted to engage with the panels and sashes when united and hold them in an upright position, as and for the purpose specified.

3. In the construction of cars, the combination, with the body thereof, its sides being partially constructed of a series of upright posts extending from top to bottom, provided with grooves in their opposed faces at their lower ends and a recess extending from the terminations of the grooves upward, of panels held to slide in the grooves of the posts and sashes separately pivoted at their upper ends in the recessed portions of the posts, locking devices connected with the panels and sashes adapted for engagement when the panels are slid upward along the inner faces of the sashes, and latch devices attached to the roof of the car-body and adapted for engagement each with a panel and sash when connected, as and for the purpose set forth.

4. A convertible car-body the sides of which consist of a series of posts extending from top to bottom, the spaces between which represent sections, a panel held to slide in the lower portion of each section, a sash pivoted in the upper portion of each section to have an independent swinging movement, the sash and panel of each section being adapted to slide one upon the other, locking devices adapted to connect the panels and sashes when in such position, and latches adapted to hold the connected sashes and panels in an elevated position within the car, as and for the purpose set forth.

MANSEL E. HEACOCK.
THOMAS H. LOVEJOY.

Witnesses:

D. G. SNIEVE,
THEO. L. BOLANDER.