

No. 677,293.

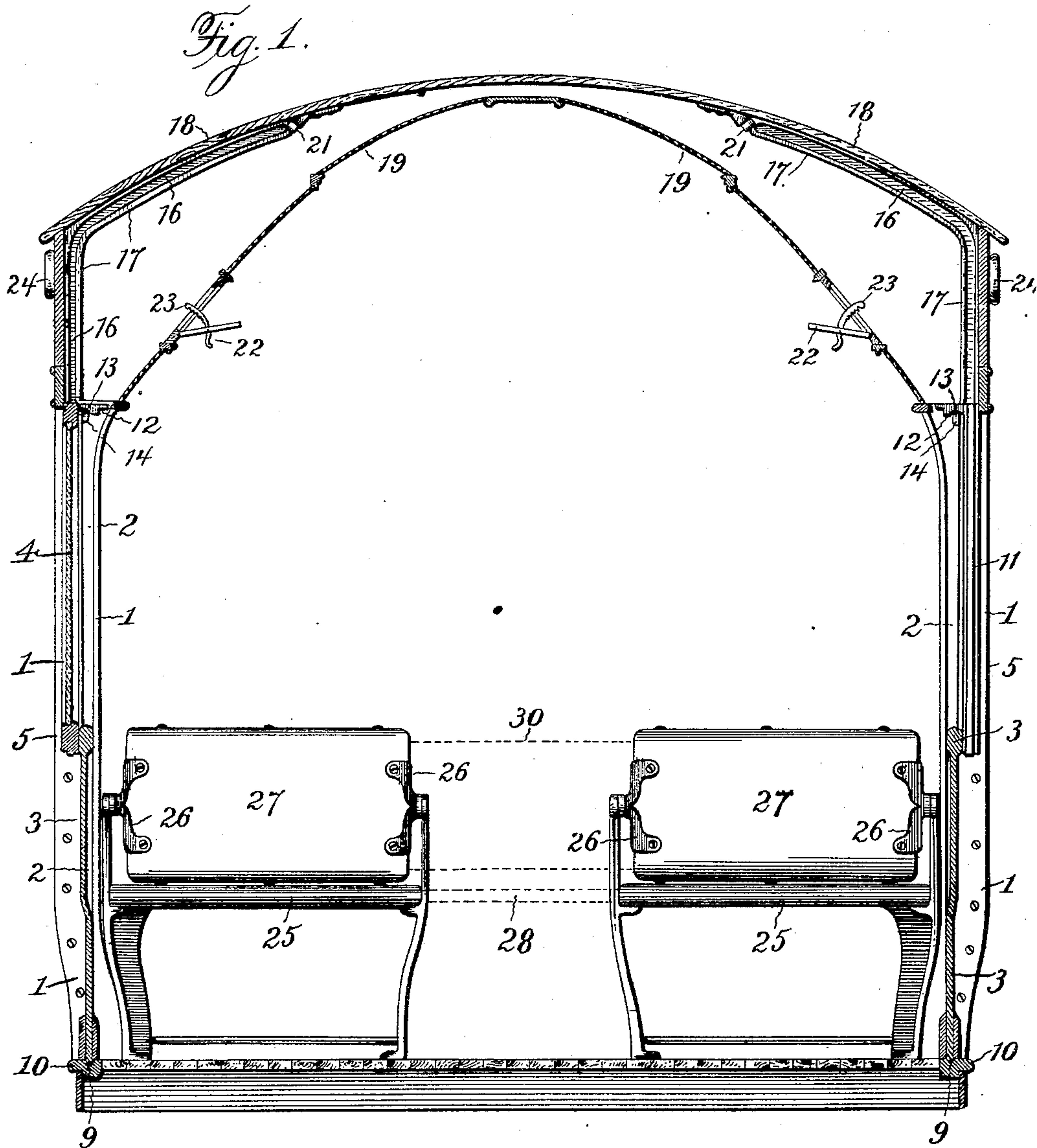
Patented June 25, 1901.

H. TROST.
CONVERTIBLE OPEN AND CLOSED CAR.

(Application filed Mar. 23, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES

James Hutchinson.
Enoch Edmonston Jr.

INVENTOR

Henry Frost
by [Signature] Attorney

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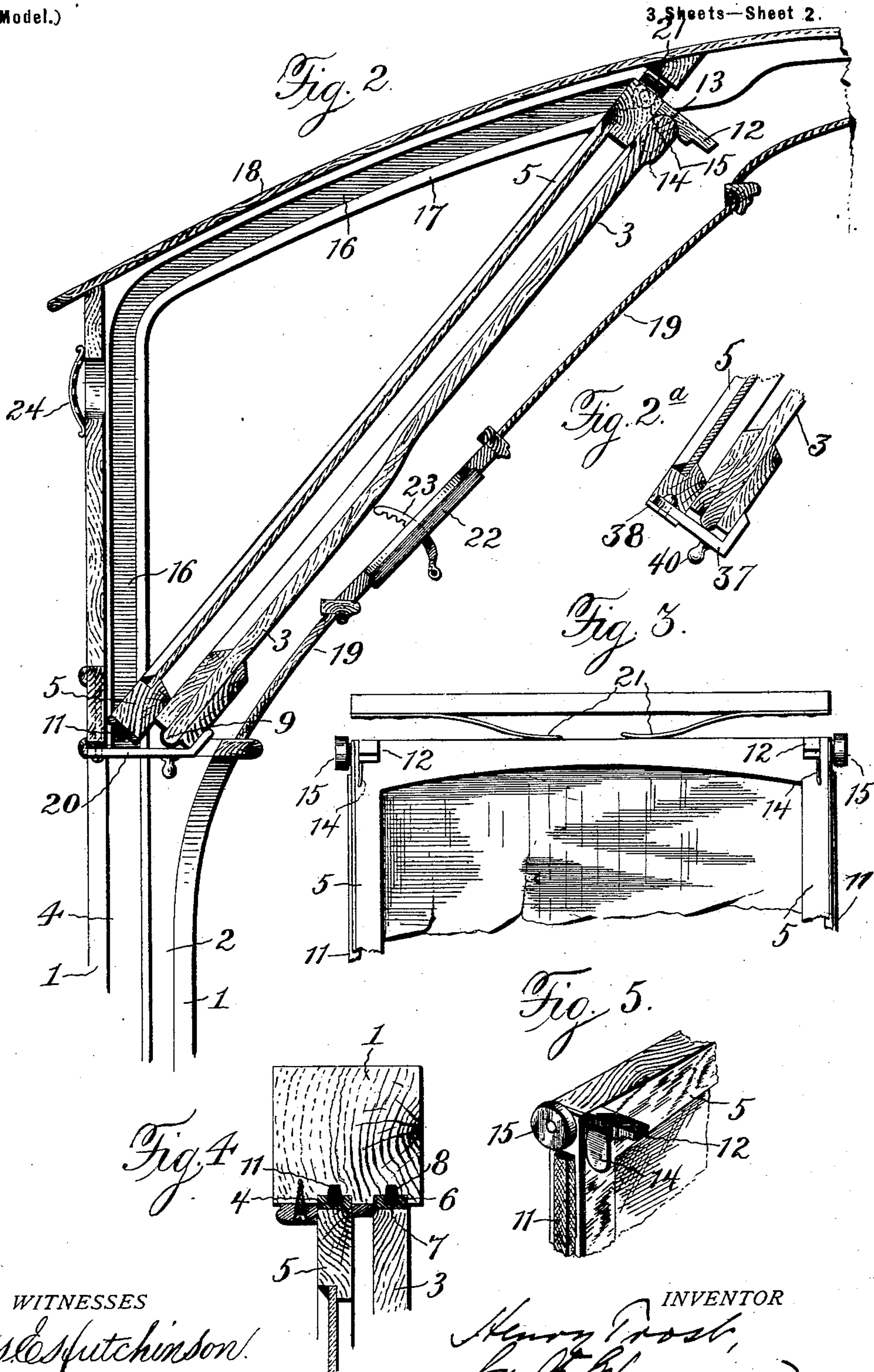
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(No Model.)

3 Sheets—Sheet 2.



WITNESSES

James Hutchinson
Enoch Edmonston Jr

INVENTOR

Henry Frost
by R. H. [Signature]
Attorney

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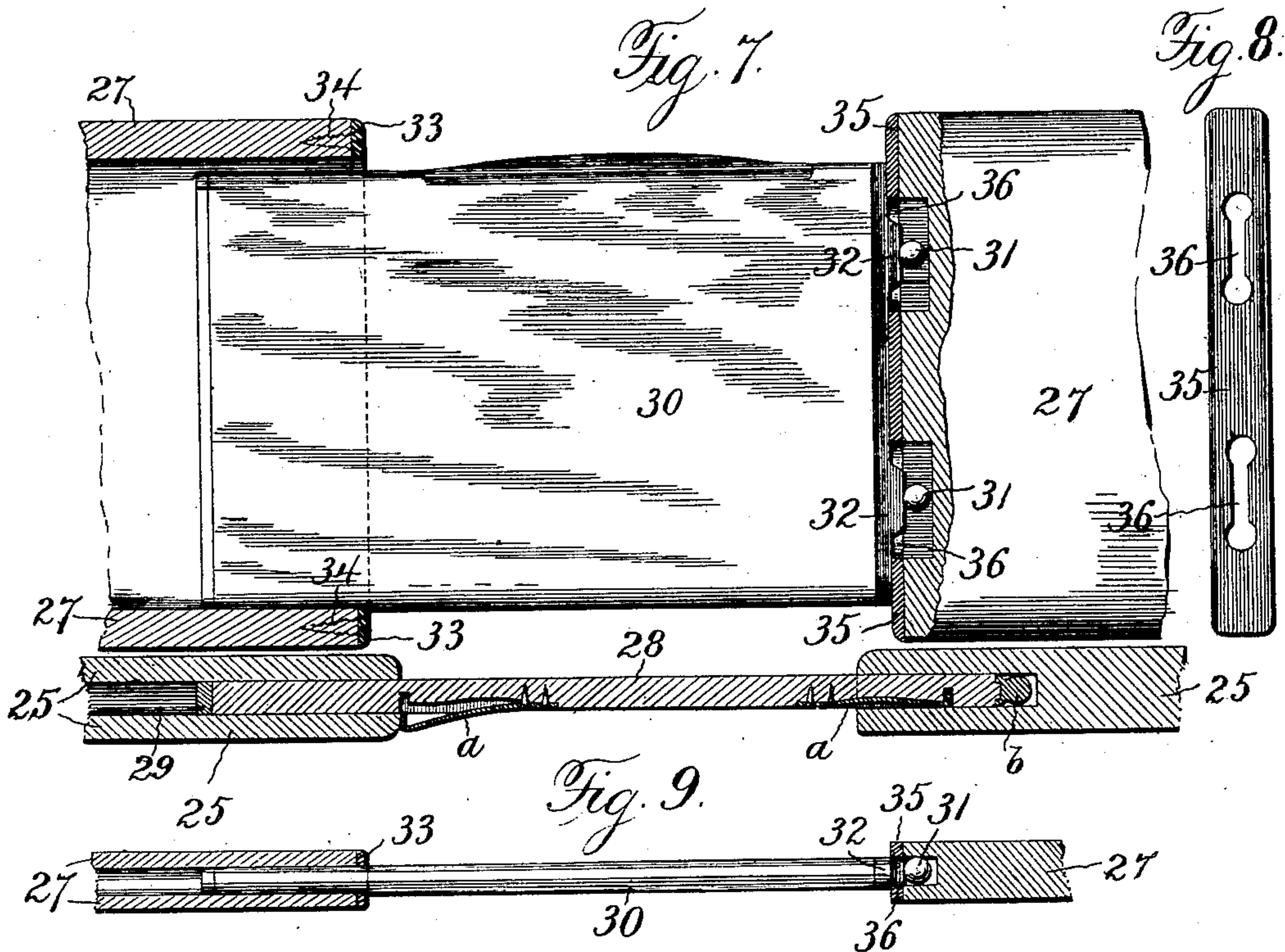
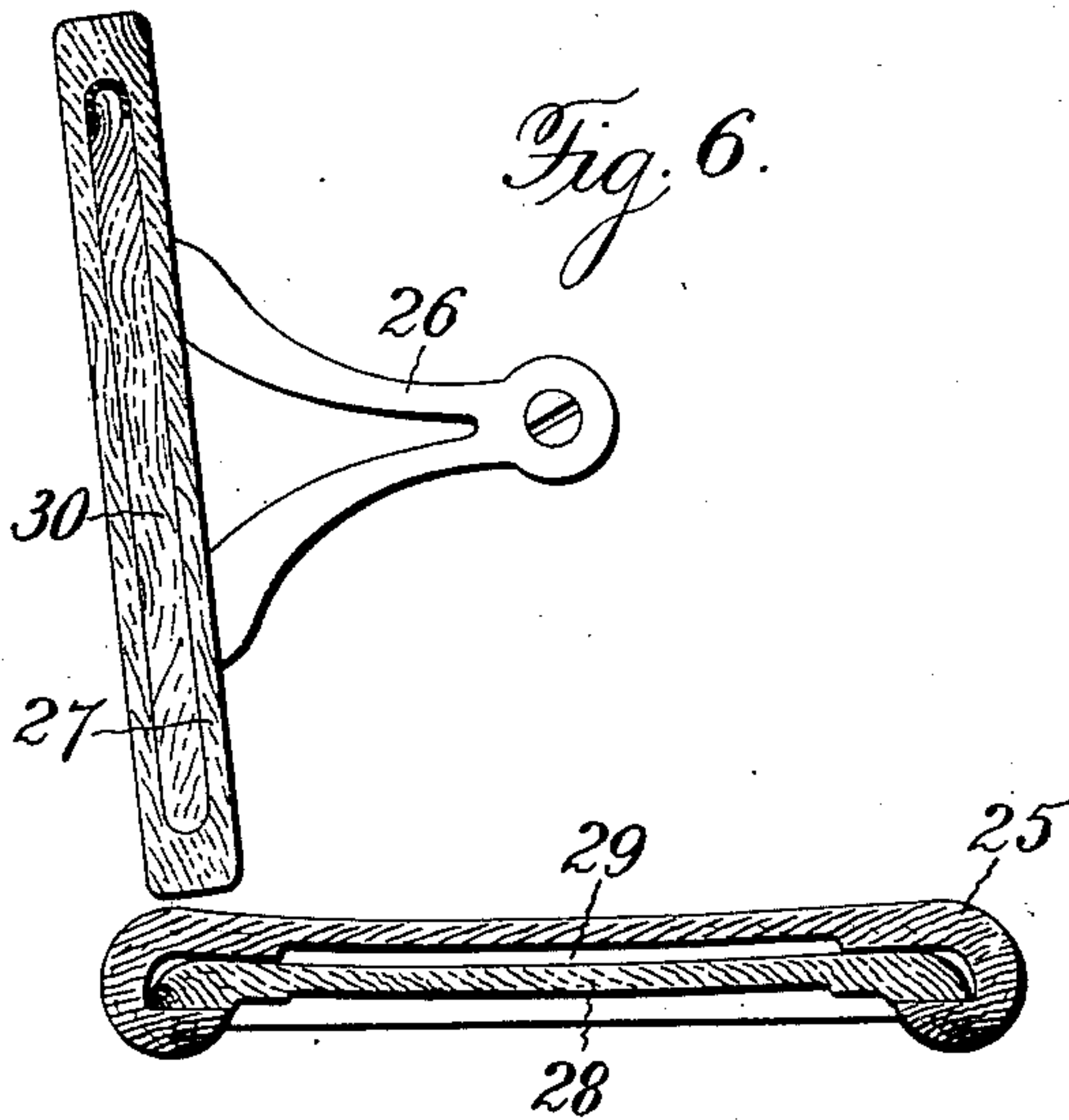
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3 Sheets—Sheet 3.



WITNESSES
Jas. E. Hutchinson
Enoch Edmonston Jr.

INVENTOR
Henry Frost,
by *[Signature]*
Attorney.

UNITED STATES PATENT OFFICE.

HENRY TROST, OF COHOES, NEW YORK.

CONVERTIBLE OPEN AND CLOSED CAR.

SPECIFICATION forming part of Letters Patent No. 677,293, dated June 25, 1901.

Application filed March 23, 1899. Serial No. 710,195. (No model.)

To all whom it may concern:

Be it known that I, HENRY TROST, a citizen of the United States, residing at Cohoes, in the county of Albany and State of New York, have invented certain new and useful Improvements in Convertible Open and Closed Cars; and I do 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to convertible open and closed cars, and has for its object to provide improved features of construction in convertible open and closed cars wherein the sashes and panels are stored in the top of the car between the ceiling and roof.

It has further for its object to provide a construction by which when the car is to be used as an open car the seats, as well as the backs to the seats, may be extended so as to make a continuous seat and back from side to side of the car, while when the car is to be used as a closed car these extensions may be slid out of view and so as to leave an aisle from end to end of the car between the rows of seats therein.

It has further for its object to provide improved details in construction of the several parts, as will be hereinafter particularly described.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction and also in the combination of parts hereinafter particularly described and then sought to be specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a vertical cross-section through a car embodying my invention. Fig. 2 is a vertical cross-section, on an enlarged scale, through a portion of upper part of car. Fig. 2^a is a modified form of device for holding panel and sash together when raised. Fig. 3 is a front view of part of sash, showing springs for pressing down sash and panel onto rest. Fig. 4 is a cross-section through portion of one

post, panel, and frame. Fig. 5 is a perspective of part of upper portion of sash. Fig. 6 is a section through seat and back. Fig. 7 is an elevation of two backs and seats and extension-slide with parts in section. Fig. 8 is a front view of facing-plate to end of one back; and Fig. 9 is a longitudinal section through a portion of two backs, showing extension-slide in plan.

In the drawings, the numeral 1 designates the upright posts of the body of the car, between which the windows and the panels will slide. These posts are formed with grooves 2 in their faces for the reception of the solid panels 3, which will constitute the lower portion or portions of the sides of the car when used as a closed car. The posts are also provided in their faces with grooves 4 to receive the sliding windows 5, which will constitute the upper portion of the closed sides of the car. The edges of the panels may be faced with metal 6, so as to prevent warping of the panels, and in the side edges of the panels the metal facing may be formed with grooves 7 to receive rubber or other packing strips 8, which also fit in grooves in the posts and project from the grooves in the metal facing of the panels, so as to make close joints and prevent rattling and exclude dust. The lower edges of the panels may be formed with a bead 9, which will fit into a groove in the sill 10 of the car, which is preferably of metal and may be faced with rubber or other suitable cushioning material, so as to make a close joint with the bead 9 of the panels. The edges of the window-sash may likewise be faced with metal and formed with grooves in their edges to receive rubber or other packing strips 11, which project slightly from the edges of the sash, so as to make close joints with the window-sash. The packing-strips will extend only the length of the panels and of the window-sash without extending from top to bottom of the posts. The meeting-rails of the window-sash and panels may also be provided with suitable packing to make a close joint; but it is not deemed necessary to illustrate the same, as it will be readily understood. The upper edges of the window-sashes will have suitable projections, against which the top edges of the panels will abut when the panels are raised, so that when the panels

are thus brought into engagement with the sashes the panels and the sashes can from that point be lifted together. I prefer to form these abutments or projections by the inwardly-extending flanges or abutments 12. I also prefer to form the under side of these abutments next to the top rail of the window-sash with a groove or recess 13, into which the upper rail of the panel may extend when lifted, and thus afford a support for the panel upon the sash when the two are tilted in their raised position, thus preventing the panel from dropping away from the sash. For further security in holding the panel to the sash when the panel is lifted I place springs 14 in the recesses 13, so as to bear against the edges of the top rail of the panel, and thus tend to hold the panel in the groove by spring-pressure. To the upper corners of each sash are secured pintles or friction-rollers 15, which when the sash is lifted, together with the panel, will run in grooves or ways 16, formed in any suitable manner in the top of the car, as illustrated, so as to guide the panel and sash in their upward and inward movement at the top of the car, which grooves may be formed in strips 17, secured to the inside of the top of the car. These pintles or rollers also serve to support the window-sashes and panels in their inclined position when moved into the space between the roof 18 and the ceiling 19 of the car, as indicated in the drawings. When the sashes and panels are in this position, their lower ends may rest against pivoted stops 20 so positioned when swinging inwardly as to prevent the sashes and panels from sliding downward. The sashes and panels may be pressed against these stops by springs 21, which exert a downward pressure upon the sashes and panels, and against which springs the sashes and panels are pressed upward when they are to be lowered until their lower ends are freed from the steps or rests 20, and when that is the case the stops 20 are swung sidewise and the panels and sashes can be moved down, being guided in the movement by the pintles or rollers 15 moving in the grooves 16. When the sashes have reached the limit of their lower movement, a pull on the panels will relieve the same from the grasp of the springs in the recesses 13, thus permitting the panels to be moved into their position at the base of the car. It will be observed that under this construction the car can be readily converted from a closed to an open car, or vice versa, and that when used as an open car its sashes and panels are supported within the space between the roof and the ceiling of the car, thus entirely concealing the same from view and at the same time protecting the same against the elements.

For purposes of ventilation I form hinged ventilators 22 in the ceiling of the car, which ventilators may be held at any desired angle by the levers 23. The openings controlled by these ventilators communicate with the space

between the ceiling and the roof of the car, and ventilation to this space is afforded through ventilators 24, located in the sides of the car at their junction with the roof or adjacent thereto, and which ventilators may be of any approved pattern.

The numerals 25 indicate the seats in the car and which are provided with the pivoted or swinging arms 26, which carry the backs 27 and permit the backs to be swung from one side to the other, according to the direction in which the car is to be moved. When the car is used as a closed car, the seats are on each side and separated by a middle aisle. When the car is used as an open car, this aisle is closed by means of slides 28, which fit within recesses 29, formed in the seats 25 and are adapted to slide endwise, so as to extend from one seat to the other and rest partly within the recess of the two opposite seats or of the upright end standards of the seat, thus closing the aisle-space and affording a continuous seat from side to side of the car. Under this construction it is only necessary to provide a single slide for the two opposite seats, and when the car is used as a closed car the slide is moved within its recess in the seat and is entirely concealed from view. Suitable springs *a* may be provided for increasing the friction between the slides and the seats, so that the slide will not accidentally slip or move endwise, and which may also bear against the ends of the seats or their end standards, so as to prevent end movement. The end of the seat may have a metal face-plate and hand-pull *b*. Such springs, however, are not absolutely necessary.

In order to afford a continuous back to the seats when the car is used as an open car, I provide the backs to the seats on one side of the aisle with slides 30, which move in recesses formed in the backs, so that when these slides are extended they will cross over the aisle-space and connect one back with another, and thus provide a continuous back to the seat from side to side of the car. These slides are provided with knobs 31, which may be cast as a part of the metallic plates 32, which will be secured in any suitable manner to the ends of the slides and is encompassed by the face or escutcheon plate 33, which will be secured to the end of the seat-back by screws 34. The edge of the back to the seat opposite the back carrying the slide is provided with a metallic plate 35, which is formed with the slots 36, having enlarged ends, so that when the slide of the back is extended into the position to bring the knobs 31 opposite the enlarged ends of the slots 36 said knobs may pass through the enlarged ends of the slots, and then by moving the back in the direction of the narrow portion of the slot the knobs will pass back of the edges of the narrow portion of the slot, and thus lock the slide to the back of the opposite seat. The slides may be held against accidental end movement in the recesses in the

backs of the seat by means of springs placed inside the recesses to bear against the slides or by other means.

It will be observed that under the construction illustrated and described the car is readily converted from an open to a closed car, so that the same car can be used in summer as well as in winter, and even when used as a summer-car and in the event of a storm the sashes and panels can be readily lowered so as to convert the open car into a closed car, thus affording protection for the passengers against the inclement weather. It is also to be noted that the window-sashes and panels are entirely concealed from view when elevated in converting the car into a summer-car. It will also be noted that no substitution of seats is required in changing from one kind of car to the other, as the provision of the slides to the seats and to the backs enables the conversion to be readily made from one style of car to the other, and when the extensions are not to be used they are stored away in the seats and their backs and entirely concealed from view. The construction also provides against the shaking or rattling of the parts, as proper packings or frictional devices are provided to guard against the rattling, and also to afford close joints when the car is used as a winter-car. But little time and no skilled labor are required to make the conversion from one style of car to the other, and no storage-room outside of the car itself is necessary for storing away the parts when the car is converted from a summer to a winter car.

Instead of the springs 14 for holding the panels to the sashes when stored in the top of the car, I may employ a pivoted stop or rest 37, set into the lower edge of the sash and secured thereto by screws passing through the metal plate 38, which may have a recess to receive the knob 40, by which the stop or rest is swung on its pivot. When the stop or rest is swung under the panel, as shown in Fig. 2, it will permit the panel from dropping below the sash, and the same may rest upon the pivoted stop 20 in the same manner as illustrated in Fig. 2 when the sash and panel are stored in the top of the car. When the sash and panel are to be separated, the pivoted stop or rest 37 is swung parallel with the lower edge of the sash, which may be slotted to receive the right-angled portion of the stop.

I have illustrated and described with particularity the preferred details of construction and arrangement of the several parts; but I do not wish to restrict myself thereto except where specific claims are made to details, as it is obvious that changes can be made without departing from the essentials of the main features of the invention.

Having described my invention and set forth its merits, what I claim is--

1. In a convertible open and closed car, the combination of a rigid sliding window-sash,

a rigid sliding panel, members between which the sash and panel slide, said members having grooves 16 therein extending substantially in a line parallel with the sides of the car to a point adjacent to the car-roof and then deflected inwardly, said grooves being a continuation of the grooves 4 in the upright posts of the car, means connecting together the sash and panel, and a pintle extending from one of said parts into said groove whereby both parts are tilted inwardly, one overlying the other, in the space between the ceiling and roof, substantially as described.

2. In a convertible open and closed car, the combination of a sliding window-sash and panel, one of said parts having a recess to receive a portion of the other part when one is brought opposite to the side of the other, and a gripping device for securing one part in the groove of the other, substantially as and for the purposes described.

3. In a convertible open and closed car, the combination of the sliding window-sashes and panels adapted to be tilted inwardly in the space between the ceiling and roof of the car, members formed with ways for guiding said parts when sliding, a stop for said parts to bear against when stored in the space between the ceiling and roof, and means for exerting a yielding downward pressure on said parts when in said space, substantially as and for the purposes described.

4. In a convertible open and closed car, the convertible seats consisting of reversible backs provided with slides to connect the backs of opposite seats and reversible with the backs, and the slides to connect one seat-bottom with the opposite seat-bottom to form a continuation thereof, substantially as described.

5. In a convertible open and closed car, the convertible seats consisting of reversible backs provided with slides to connect the backs of opposite seats, the slides to connect one seat-bottom with the opposite seat-bottom, and means for locking both sets of slides in position when extended, substantially as described.

6. In a car, the combination with the reversible seat-backs, of a slide to connect the backs of opposite seats to form a continuation of the backs, and adapted to be reversed with the backs, substantially as and for the purposes described.

7. In a car, the combination with the seat-backs formed with recesses extending lengthwise thereof, to receive and house a slide, of a slide fitting in the recess to move endwise therein, and adapted to connect the backs of opposite seats to form a continuation of the backs, substantially as and for the purposes described.

8. In a car, the combination with the seat-backs, of an endwise-moving slide to connect the backs of opposite seats to form a continuation thereof, and means for locking the slide

to the connecting-back, substantially as and for the purposes described.

9. In a car, the combination with the seat-backs formed with recesses to receive slides,
5 of slides to connect the backs of opposite seats, and a device for locking the slide to the opposite back and consisting of a slotted member having an enlarged opening to receive a projection adapted to pass through

the opening and engage with the narrower portion of the slot, substantially as and for the purposes described.

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

HENRY TROST.

Witnesses:

HARRY J. PRICE,
HERBERT GAGE.