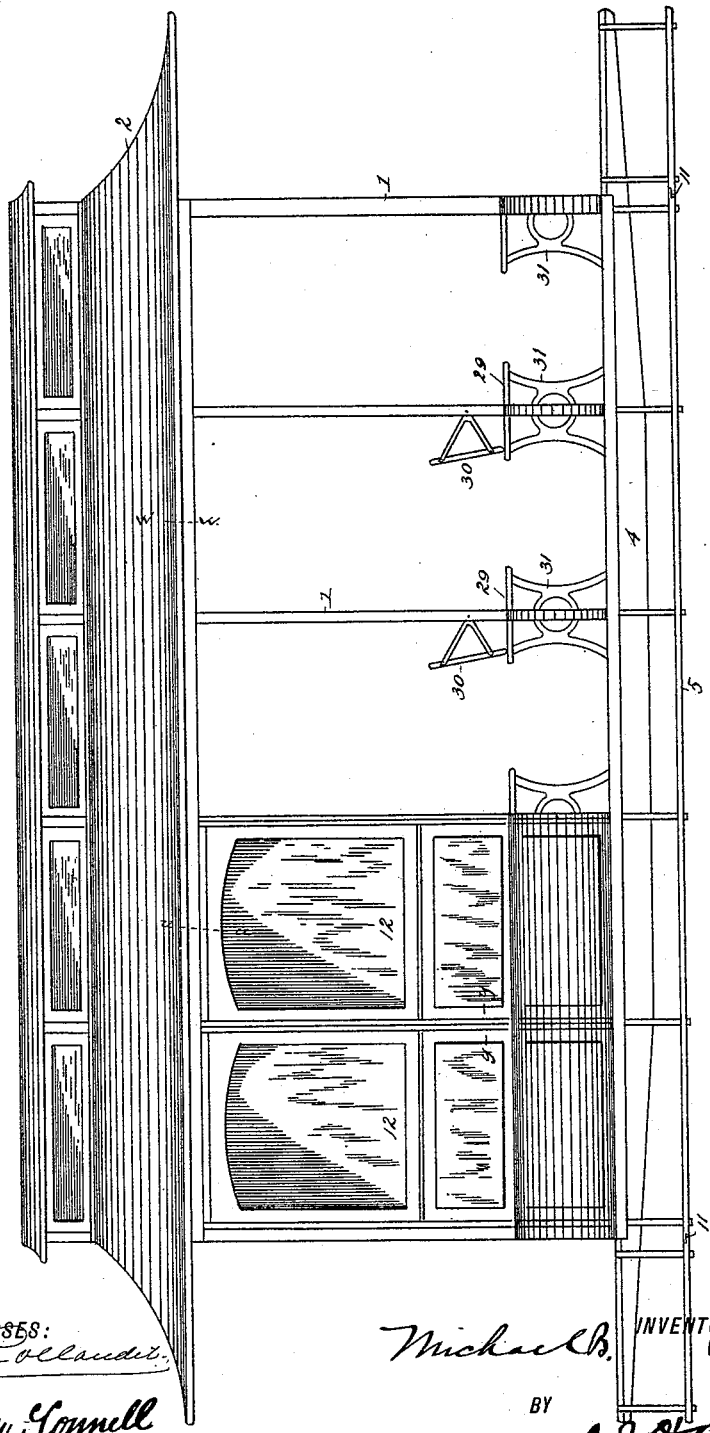
(No Model.) 3 Sheets—Sheet 1.

M. B. RYAN.

CONVERTIBLE CAR.

No. 454,921. Patented June 30, 1891.

Fig. 1.



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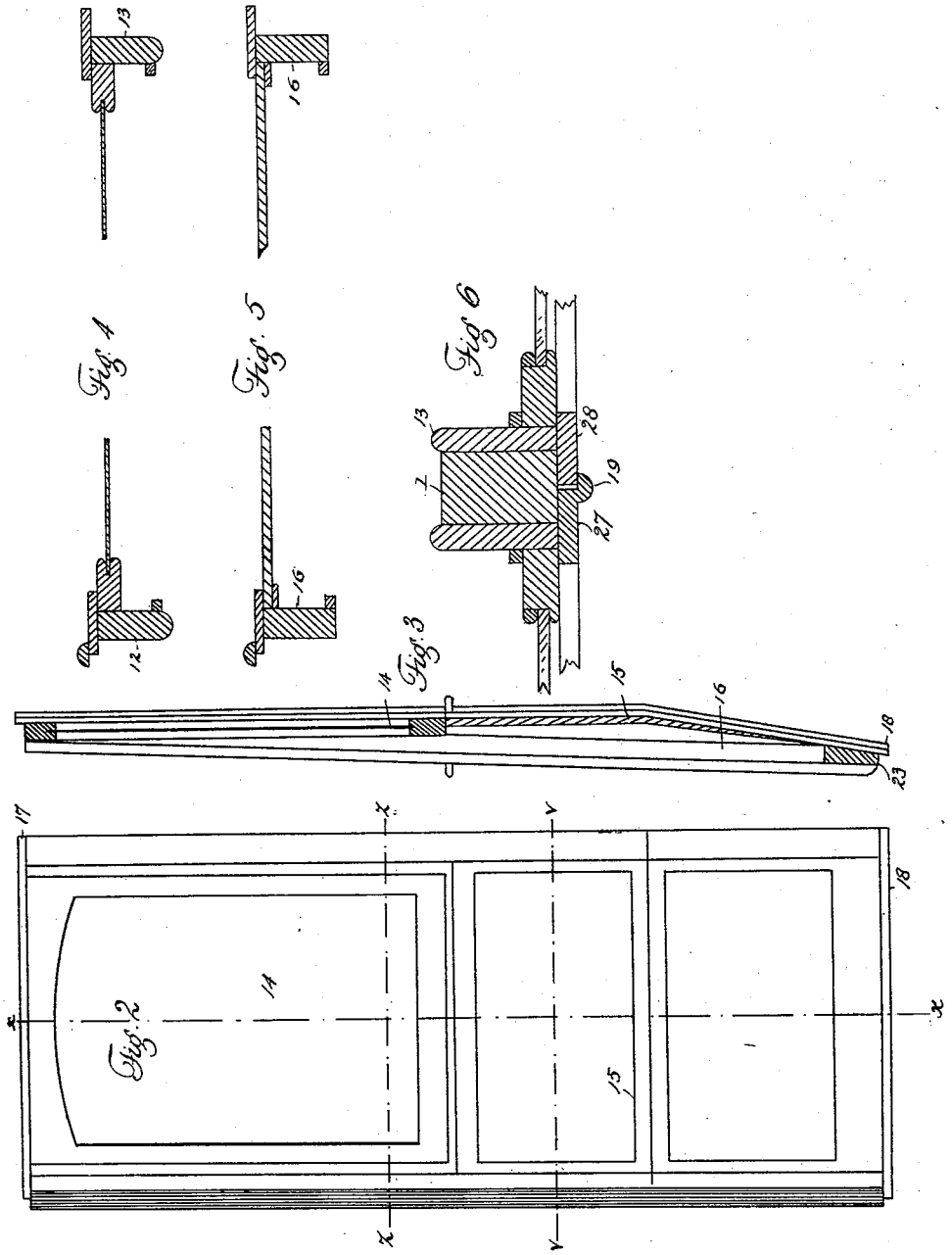
(No Model.) 3 Sheets—Sheet 2.

M. B. RYAN.

CONVERTIBLE CAR.

No. 454,921. Patented June 30, 1891.



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(No Model.) 3 Sheets—Sheet 3.

M. B. RYAN.

CONVERTIBLE CAR.

No. 454,921. Patented June 30, 1891.

Fig. 7

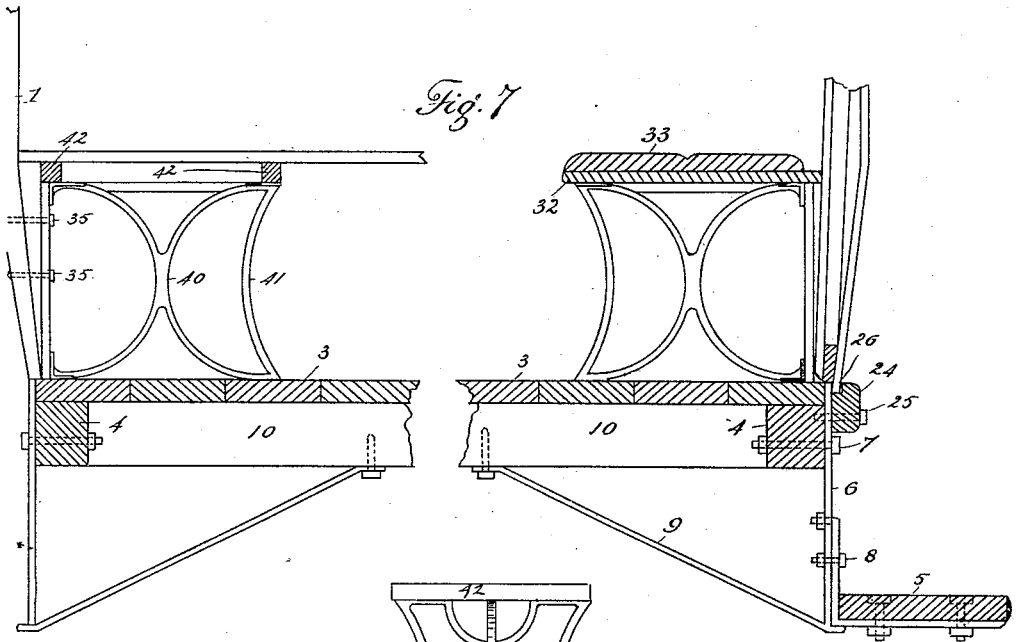


Fig. 8

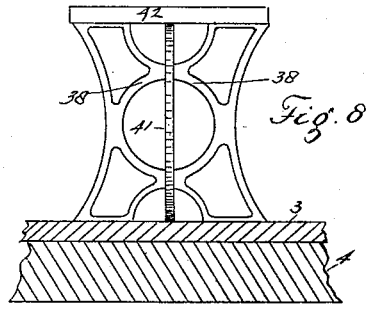


Fig. 12.

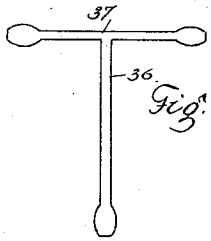
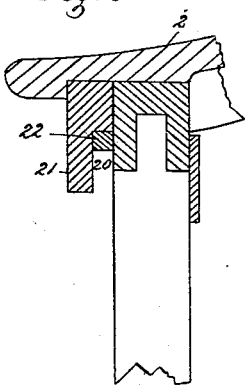


Fig. 9



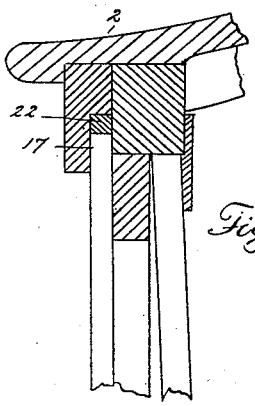
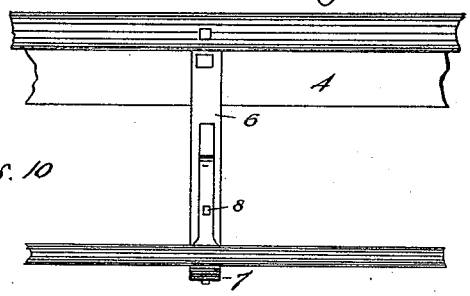


Fig. 10

Fig. 11



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UNITED STATES PATENT OFFICE.

MICHAEL B. RYAN, OF DENVER, COLORADO.

CONVERTIBLE CAR.

SPECIFICATION forming part of Letters Patent No. 454,921, dated June 30, 1891.

Application filed October 18, 1890. Serial No. 368,603. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL B. RYAN, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Convertible 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in convertible cars or cars that may be readily changed or altered so that they may be used as summer or winter cars, being open or closed according as the season may require. The demand for a practical car of this kind seems to be universally realized, yet the old system which necessitates the keeping on hand by car companies of two sets of cars, one set for summer and one for winter use, seems to be still in general practice throughout this and other countries, which demonstrates quite conclusively that a convertible or interchangeable car answering the demands of the companies and the requirements of the public has not as yet been produced.

The object, therefore, of my invention is to provide a satisfactory convertible car, which shall be of simple construction, economical in cost, reliable and durable in use, and quickly changed from the closed to the open, and vice versa.

To these ends my invention consists of the features, arrangements, and combinations hereinafter described and claimed.

In the accompanying drawings is illustrated an embodiment of the invention.

In the drawings, Figure 1 is a side elevation of a car provided with my improvements, a portion thereof being shown as closed for a winter car and the other parts as an open or summer car. Fig. 2 is a front elevation of a removable section used in forming the sides of the closed style of car. Fig. 3 is a vertical section taken on line *x x*, Fig. 2. Fig. 4 is a cross-section taken on line *z z*, Fig. 2. Fig. 5 is a similar section taken on line *v v*, Fig. 2. Fig. 6 is a cross-section on an enlarged scale, taken through one of the posts and showing the adjoining sections of the closed car in position. Fig. 7 is a vertical cross-section taken through the car, the open style of car being illustrated on the left and the closed style on the right, the top in each case being broken. Fig. 8 is an end view of the bracket supporting the seats, the floor and supporting-sill being shown in cross-section. Fig. 9 is a vertical section taken on the line *w w*, Fig. 1. Fig. 10 is a similar section on the line *u u* of the same figure. Fig. 11 is a front view of the outside step used in the open style of car. Fig. 12 is a plan view of the bracket used to support the seats of the car.

In the views, wherein similar reference-characters indicate corresponding parts of the mechanism, let the numerals 1 1, &c., designate the posts or standards resting upon the floor 3 and supporting the top or roof of the car. The floor is supported on each side of the car by a suitable longitudinal sill 4 extending the entire length of the car.

The open car is provided with an outside longitudinal step 5, removably secured to hangers 6 made fast to the sill 4 by bolts. These steps are provided with angular plates 7, which form a support therefor and also extend upward, terminating, as shown in the drawings, in threaded projections extending through an aperture in the hanger and secured on the opposite side by a nut. These plates 7 are further secured to the hangers 6 by means of bolts 8. The hangers are provided with braces 9, formed integral therewith and extending underneath the car, where they are bolted to the cross-beams 10. The step is provided with joints 11, separating the main central portion thereof from the platform extensions, so that in changing from an open to a closed car the step leading to the body of the car may be removed without disturbing the extremities leading to the platforms, which remain the same in both styles of the car.

In forming the closed car I make use of the removable parts or sections 12, which are of sufficient height to reach from the top to the bottom or floor of the car, and wide enough to inclose the space between two posts or stanchions 1. These sections 12 consist of a suitable casing or frame 13, having a window

14 in the upper portion and a panel 15 in the lower part. The lower portion of the section is provided with a receptacle 16, within which the window may be lowered whenever it is desired to open the upper part of the section. The upper and lower parts of the frame are provided with extensions or tongues 17 and 18, while the sides are provided with vertical strips 27 and 28, extending beyond the main parts 13 of the frame, said vertical strips of two adjoining sections being adapted to overlap and conceal the post or standard 1 when the sections are in place, the joints formed by the meeting edges of these strips being covered by the bead 19, formed integral with one of the strips, as 27.

In placing the sections 12 in position, the upper tongue 17 of each is inserted in a socket 20, formed in a longitudinal top or letter plate 21, secured to the roof and across the upper portion of the posts or standards 1, which form the inner walls of the socket 20, which is provided with a rubber or other suitable resilient packing 22. The bottom of the section is then crowded to its position, engaging the outer portion of the floor of the car, the bottom of the sections being beveled or slightly rounded at 23, so that when crowded inward it wedges tightly in place, where it is securely held by the longitudinal bottom strip or cleat 24, secured to the sills 4 by bolts 25, said strips being provided with a socket 26, for the reception of the bottom tongue 18 of the sections, the inner wall of said socket being formed by the outer edge of the floor of the car. Socket 26 should also be provided with a suitable resilient packing in order to obviate the possibility of any jarring, shaking, or rattling of the sections 12 when the car is in motion.

The adjoining edges of the sections 12 overlap standards 1, as before stated, the bead 19 giving a neat finished appearance to the car. This feature is best illustrated in Fig. 6.

In the open car I have shown the transverse seats 29, provided with the usual reversible backs 30, the seats being supported by the end brackets 31, securely fastened to the floor of the car and adapted to brace and strengthen the posts or standards 1, to which they are secured by means of bolts 35. A plan view of this bracket shows the same to be T-shaped, as seen in Fig. 12, and consisting of arms 36 and 37 placed at right angles to each other, the former extending from the outside toward the center of the car. The top arm 37 is continuous with web 38 extending to the floor of the car and forming the outer portion of the bracket, while arm 36 is continuous with the central web 40, provided with the outer curved arm 41. This construction is typical of any suitable construction of bracket adapted to strengthen and brace the car both transversely and longitudinally when the seats are in position thereon, the same bracket forming the support for both the transverse seats and the longitudinal side seats. The top of the bracket is covered by strips or cleats 42, lying beneath the seat when the transverse seats are used, while the longitudinal seats are placed in contact with the top of the bracket, the upholstering thereon making the seat about the same height as the transverse unupholstered seats with the parts 42 underneath.

In the closed car I prefer to use the longitudinal seats 32, provided with suitable upholstering 33, these side seats being supported by the same brackets which form the supports for the transverse seats in the open car.

It will be understood from what has been heretofore stated that the closed car is provided with a center aisle between the two longitudinal seats, while in the open car the side step 5 is employed, sufficient room only being left between the transverse seats to give the passengers comfortable resting room.

Having thus described my invention, what I claim is—

1. A convertible open and closed car, the sides of which consist of the stationary standards 1 and the removable sections 12, suitably secured to the top and bottom of the car and engaging the standards, the edges of the sections being provided with strips adapted to overlap and conceal the standards, one of said strips being provided with a bead, which covers the joint formed by the meeting edges of these strips, substantially as described.

2. A convertible closed and open car, the sides of which are formed of suitable posts or standards supporting the roof, and removable sections provided with tongues across the top and bottom thereof, a plate or board extending longitudinally across the top of the standards and provided with a socket adapted to receive the tongues on the top of the sections, the bottom of the sections being held in place by a strip extending longitudinally across the bottom in the car and provided with a socket adapted to receive the lower tongues of the sections, the sections being held in place without other aid than said top and bottom connections, substantially as described.

3. A convertible closed and open car, the sides of the car consisting of suitable standards supporting the roof, and removable sections engaging the standards, said sections being provided with a tongue across the top and across the bottom, the lower end of the sections above the tongue being beveled, as shown, a top plate extending longitudinally across the car and provided with a socket adapted to receive the tongues in the top of the sections, the lower ends of the sections being wedged in place by virtue of the beveled portion engaging the floor of the car, the lower ends being further secured in place by a bottom strip extending longitudinally of the car and provided with a socket adapted to receive the bottom tongue of the section, the sections being held in place without other aid than said top and bottom securement, substantially as described.

4. In a convertible closed and open car, the

combination, with posts or standards supporting the roof thereof, of the removable sections 12, adapted to form the sides of the car and engage the posts, said sections being provided with a window in the upper portion and a receptacle therefor in the lower portion, within which said window may be concealed at will, the edges of the sections being provided with vertical overlapping strips, the adjoining strips of any two sections being adapted to conceal the posts which they engage, one of said vertical strips being provided with a bead formed integral therewith and adapted to conceal the joint formed by the meeting edges of the two strips, the ends of the seats being suitably fashioned for removable engagement with the top and bottom of the car, substantially as described.

5. In a convertible closed or open car, the combination, with the posts or standards 1 supporting the roof, of the brackets 31, secured to the floor of the car and to the posts, said brackets being adapted to form a suitable support for the transverse seats of the open car or for the longitudinal seats of the closed car, substantially as and for the purpose set forth.

6. In a convertible open or closed car, the brackets 31, T-shaped in transverse section or plan, the top and bottom of each bracket being connected by a suitable web, said brackets being secured to the floor of the car and to the posts supporting the roof, and adapted to form the support for the transverse seats of the open car or for the longitudinal seats of the closed car, substantially as and for the purpose set forth.

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

MICHAEL B. RYAN.

Witnesses:
WM. MCCONNELL,
FRED. W. FELDWISCH.