

M. ROUNDS.
RAILWAY CAR.

APPLICATION FILED MAR. 19, 1906.

4 SHEETS—SHEET 1.

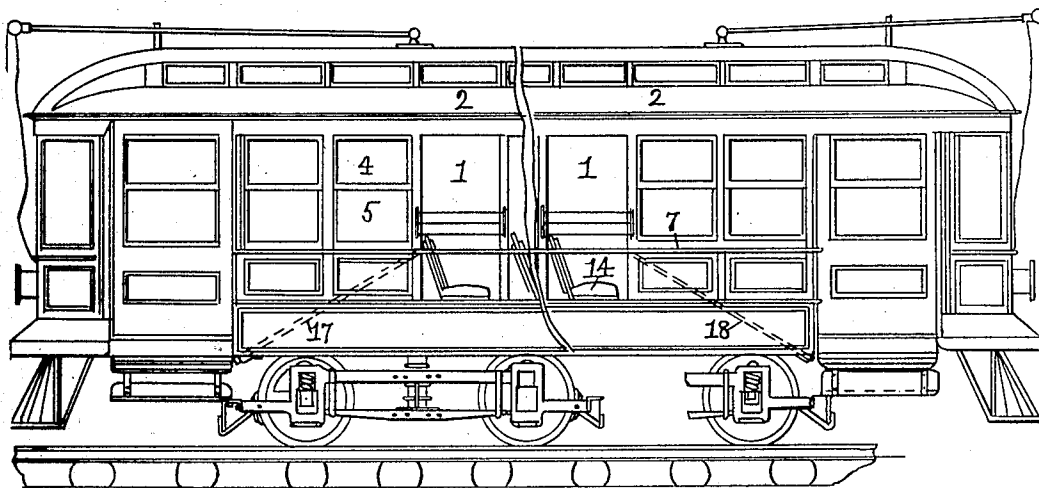


Fig. 1.

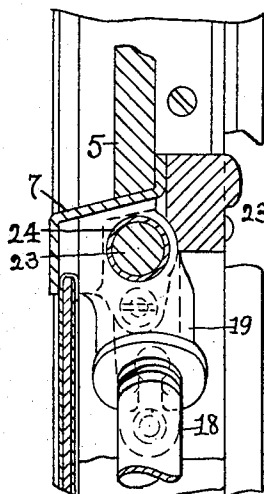


Fig. 2.

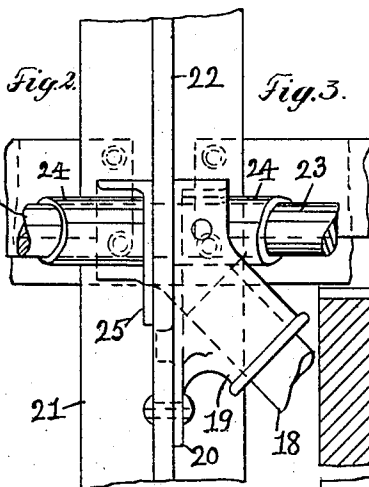


Fig. 3.

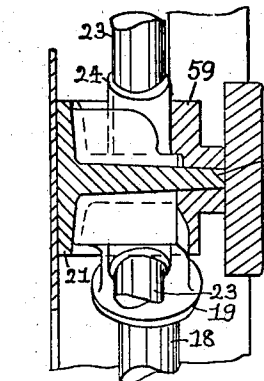


Fig. 4.

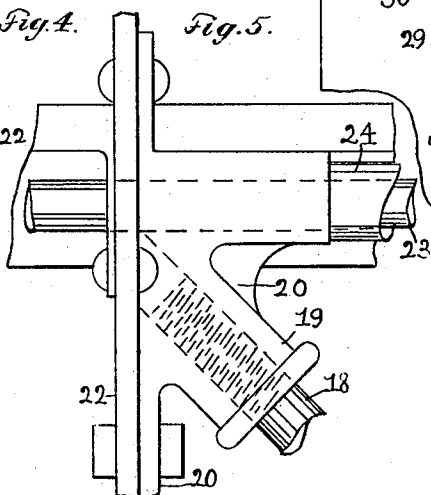


Fig. 5.

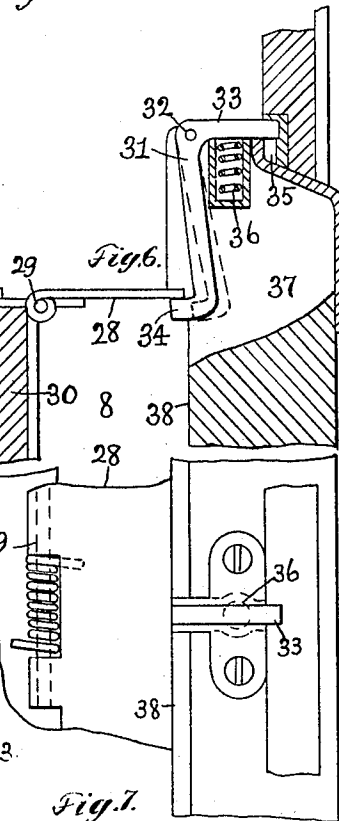


Fig. 6.

Fig. 7.

Witnesses:
E. P. Emmett
J. Murphy

Inventor:
Myron Rounds
by Jas. H. Schmale
att'y

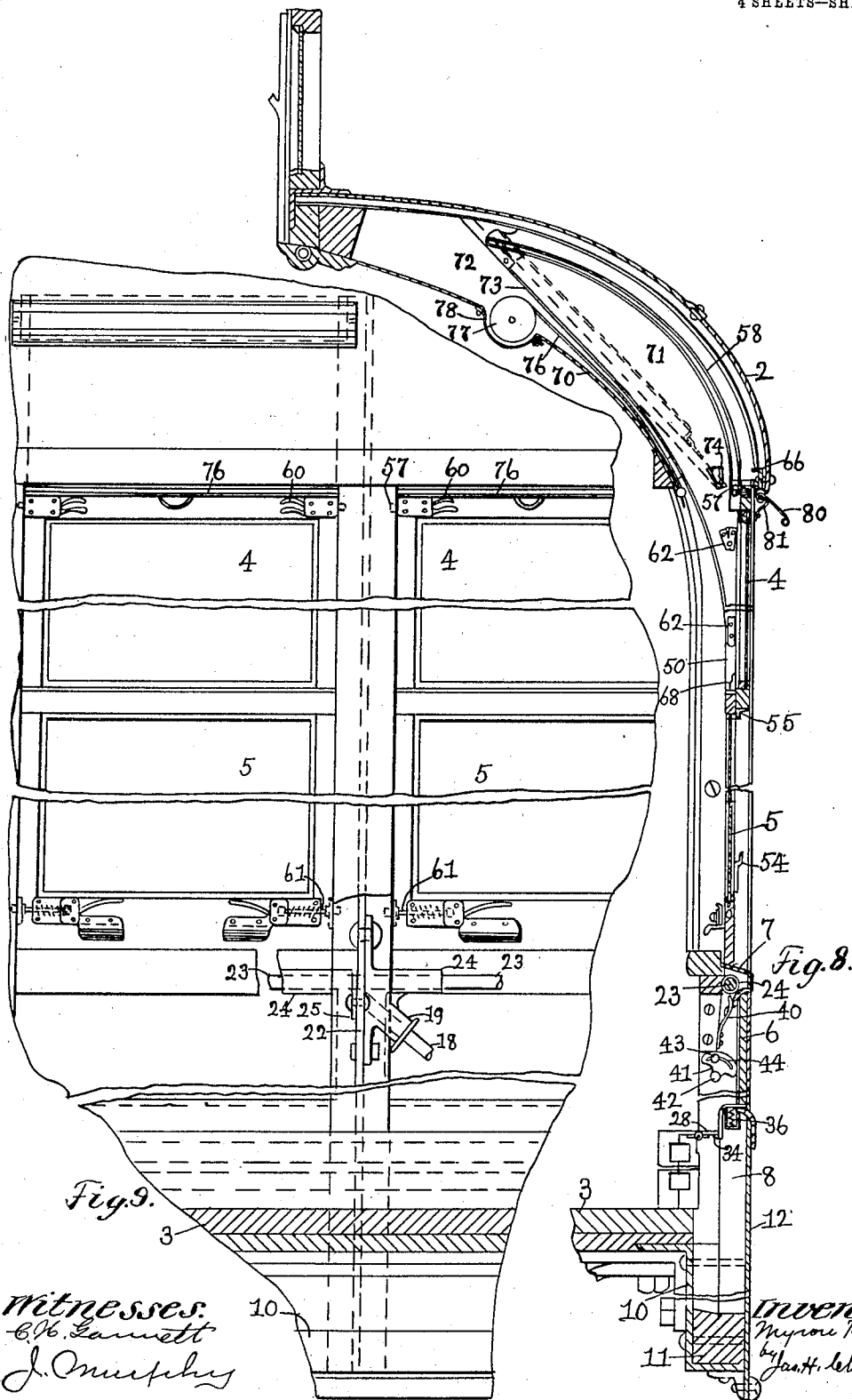
No. 895,686.

PATENTED AUG. 11, 1908.

M. ROUNDS.
RAILWAY CAR.

APPLICATION FILED MAR. 19, 1906.

4 SHEETS—SHEET 2.



Witnesses:
C. H. Lamont
J. Murphy

Inventor:
Myron Rounds
by Jas. H. Lehigh
att'y.

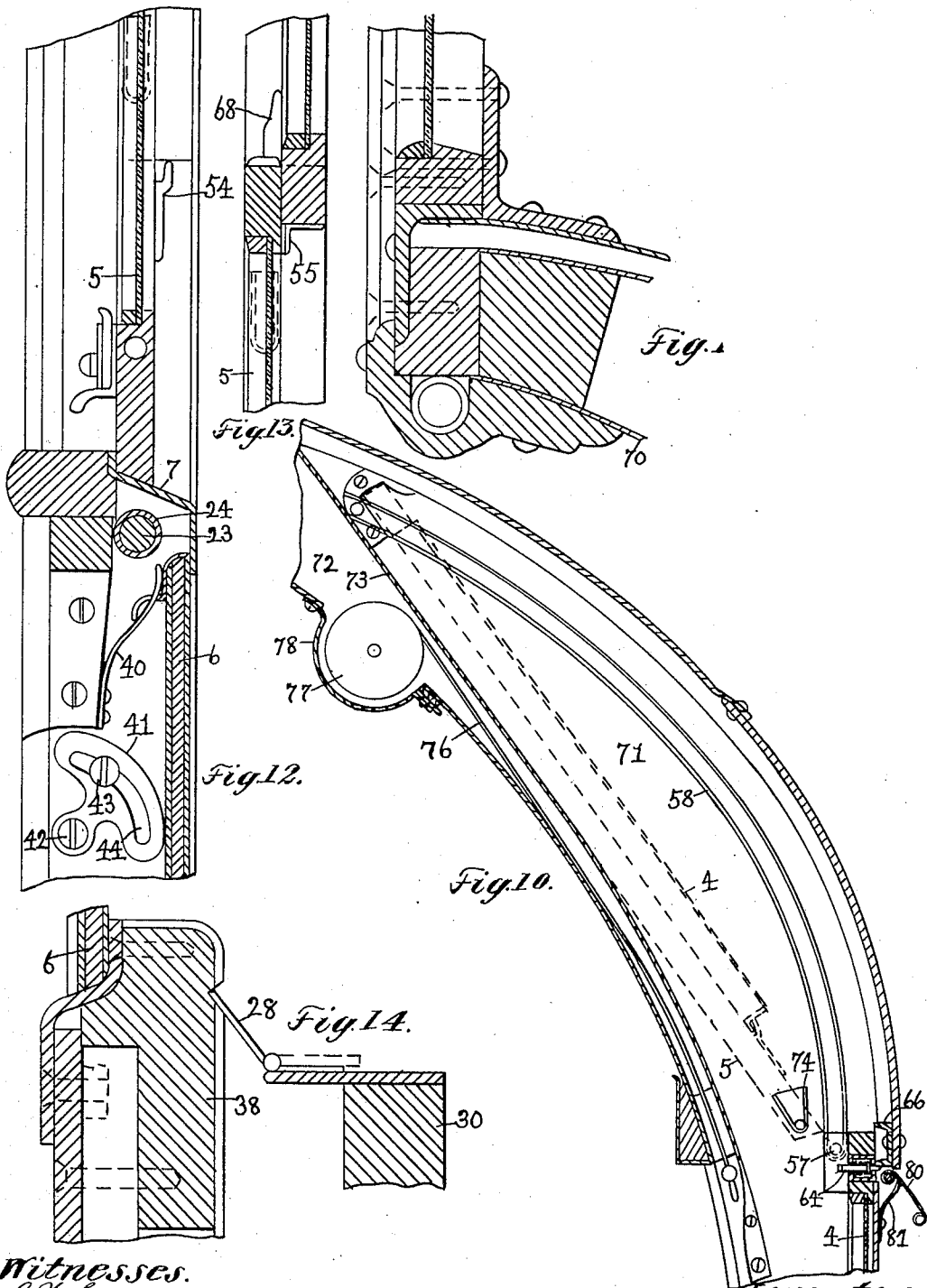
No. 895,686.

PATENTED AUG. 11, 1908.

M. ROUNDS.
RAILWAY CAR.

APPLICATION FILED MAR. 19, 1906.

4 SHEETS—SHEET 3.



Witnesses.
C. H. Lammert.
J. Murphy

Inventor:
Myron Rounds
by Jas. H. Churchill
att.

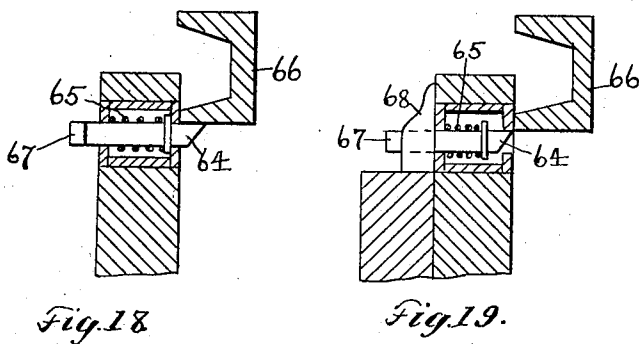
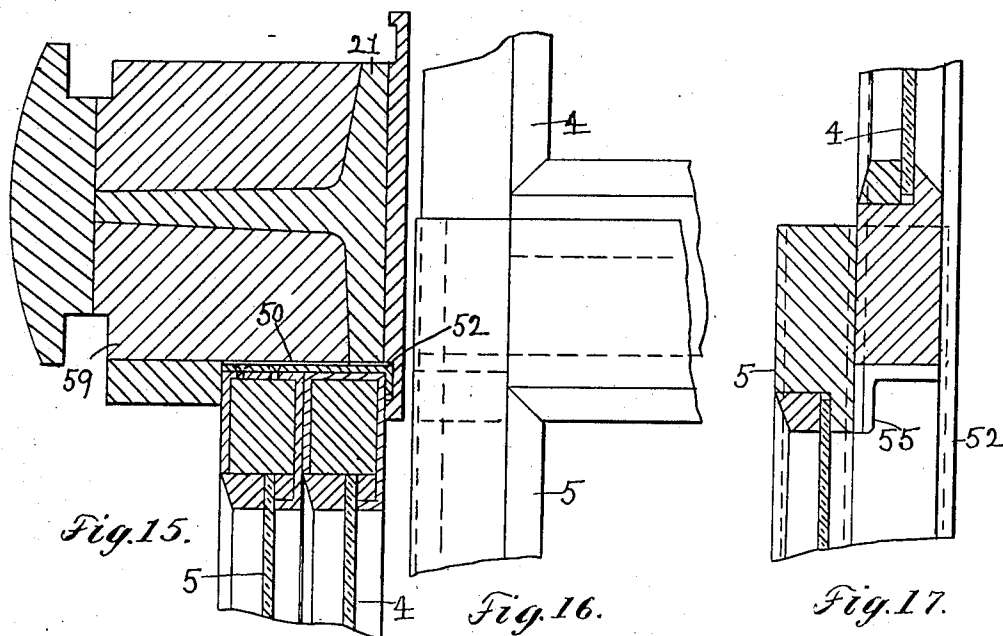
No. 895,686.

PATENTED AUG. 11, 1908.

M. ROUNDS.
RAILWAY CAR.

APPLICATION FILED MAR. 19, 1906.

4 SHEETS—SHEET 4.



Witnesses.
B. E. Sammett
J. Murphy

Inventor
Myron Rounds
By Jas. H. Churchill
att'y

UNITED STATES PATENT OFFICE.

MYRON ROUNDS, OF BOSTON, MASSACHUSETTS.

RAILWAY-CAR.

No. 895,686.

Specification of Letters Patent.

Patented Aug. 11, 1908.

Application filed March 19, 1906. Serial No. 306,740.

To all whom it may concern:

Be it known that I, MYRON ROUNDS, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Railway-Cars, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to passenger cars of that class known as semiconvertible, and such as are used on electric railways for use in winter as a closed car and in summer as an open car.

The present invention has for its object to improve the construction of the cars referred to, as will be hereinafter pointed out in the claims at the end of this specification.

Figure 1 represents in side elevation with parts broken away a semiconvertible railway car embodying this invention. Figs. 2 to 5 inclusive details on an enlarged scale to be referred to. Figs. 6 and 7, details on an enlarged scale of the pocket closing device and latch to be referred to. Fig. 8, a cross section of substantially one half of the car shown in Fig. 1. Fig. 9, a detail in elevation of parts shown in Fig. 8. Figs. 10 and 11, details in section on an enlarged scale of the roof portion of the car shown in Fig. 8. Figs. 12 and 13, details on an enlarged scale of the window portion of the car shown in Fig. 8. Fig. 14, a modification to be referred to. Figs. 15, 16 and 17, details of the windows to be referred to, and Figs. 18 and 19, details to be referred to.

The present invention has for one of its objects to provide for an increased opening in the sides of the car body, whereby the car may more nearly approximate the appearance and advantages of an open car in the summer months, while at the same time providing for a substantially tight car for use in the winter time, and whereby the seating capacity of the car may be increased as will be described. For this purpose, the car body is provided in its sides with a plurality or series of spaces 1, which extend from the roof 2 down to near the floor 3 of the car, and which are adapted to be closed by windows, each comprising an upper sash 4 and a lower sash 5, and by a drop panel 6, which latter is located below the sill 7 for the lower sash and is adapted to be dropped down into a pocket 8, which is extended below the car floor 3, and may be formed as herein shown (see Fig.

8) by a substantially Z-shaped bar or angle-iron 10, secured to the under side of the car floor 3 and to the car sill 11, to which latter the stationary panel or side piece 12 of the car body is secured. The drop panel 6 is designed to close the space or distance from the window sill 7 to and preferably below the level of the seat 14, so that in the summer time, the sides of the car for the greater portion of its length may be opened from the roof to or below the seats 14, whereby greater area is obtained for the circulation of air, and the car more nearly approaches in appearance the regular open car.

In order to permit of the removal of so much of the sides of the car body without weakening the same, truss rods 17, 18 are employed, which are inclined in opposite directions and extend from the opposite ends of the car sills up to the window sills substantially above the car body bolster, and in the present instance to the sills of the second windows from the ends of the car body as clearly represented in Fig. 1. The truss rods 17, 18 have their lower ends extended through and fastened to the car sills 11 and have their upper ends screwed into threaded sockets in an arm 19 of a casting or bracket 20 (see Figs. 2 to 5), which is fastened by rivets or otherwise to a metal post 21, herein shown as substantially T-shaped in cross-section and which extends from the car body sills 11 up into the roof as represented in Figs. 8 and 9. To still further strengthen the sides of the car, the webs 22 of the end-most posts on each side of the car body are connected by a metal rod 23 suitably secured at its ends against longitudinal movement as by nuts (not shown) and encircled between adjacent posts 21 by a metal sleeve 24, which abuts at one end against the bracket 20 and at its opposite end against a bearing plate 25 secured to the web 22 of the metal post, as clearly shown in Figs. 2 to 5. The rod 23 and the sleeves 24 which encircle it are located below the window sills 7 and are concealed from view by said sills as clearly shown in Figs. 2 and 8.

The drop panel 6 is designed to be lowered into the pocket 8, which extends below the car floor 3 by reason of the Z-shaped bar 10, and the said pocket may be closed at its upper end by a gate, valve or cover 28 (see Figs. 6 and 7), which may be hinged as at 29 to a suitable support 30 within the car body (see Figs. 6, 7 and 8). The cover or gate 28 is de-

signed to close the pocket 8, when the panel 6 is in its elevated position, so as to prevent the passengers depositing papers or other articles in the said pocket.

5 The gate or cover 28 may be locked in its closed position against downward movement, by a device which may be made as shown in Figs. 6 and 7, and which consists of a latch or
10 lever 31 pivoted at 32 and having an arm 33 which is adapted to be engaged with the panel when the latter is in its elevated or operative position, and having a finger 34 which is adapted to be projected under the gate or cover 28 as represented in Fig. 6, and thereby
15 prevent said gate or cover being moved into the pocket while the panel 6 is in its elevated or operative position. In the present instance, the arm 33 of the locking lever 31 is extended into a socket or recess 35 in the
20 panel, and its finger 34 is automatically moved out of the path of movement of the gate or cover when the panel is released from its elevated or operative position, by a spring 36 (see Fig. 6), which acts on the arm 33 to
25 turn the lever 31 into a recess 37 in the side wall of the car, which recess may and preferably will be made in a wooden facing 38 attached to the web 22 of the metal post 21.

The panel 6 may be secured in its elevated
30 or operative position in any suitable manner, as for instance by one or more springs 40, (see Figs. 8 and 12), which are adapted to engage the inner side of the panel at its opposite ends, and said panels may be fastened in
35 their operative position, as for instance in winter time, by cam plates 41, which are pivoted at 42 and are secured in their engaging position, by screws 43 passed through slots 44 in said cams. In summer the cam plates are
40 turned back out of the way and the springs 40 relied upon to hold the panels. The cams also serve to make the panels air-tight in cold weather.

When it is desired to lower a panel, it is
45 first moved upward to disengage it from the locking device or lever 31, which is automatically disengaged from the cover, thereby permitting the latter to be turned down into the pocket 8, after which the panel may be
50 lowered into said pocket.

In order to obtain superior ventilation, the upper and lower sashes 4, 5, of the windows are movable independently of each other, so that the lower half of the window can be
55 raised when it is desired to ventilate from the bottom, without disturbing the upper half, and the latter can be lowered without disturbing the lower half of the window, when it is desired to ventilate from the top. Provision is also made for connecting the upper
60 and lower parts of the window, so that when desired, the upper part may be carried with the lower part up into the roof of the car. For this purpose the lower sash of the win-
65 dows is movable in a runway 50, which is sub-

stantially straight, between the window sill 7 and the roof of the car, and the upper sash or half of the window is movable in a parallel runway and in a guide 52 attached to the lower sash.

The lower sash 5 is provided on its outer side with one or more lifting devices 54, preferably one at each side of the window, which are adapted to engage the bottom of the upper sash 4, or as is preferred, to engage angle
75 plates 55 secured thereto, (see Figs. 8 and 13), so that the upper sash may be carried by the lower sash up into the roof of the car body.

Provision is made for supporting the upper
80 sash 4, so that the lower sash 5 may be raised and lowered independently of it. For this purpose, the upper sash has secured to its sides near its upper end movable pins or catches 57 (see Fig. 9), which extend into
85 curved guideways 58 in the posts 21 or more strictly speaking in the wooden sides 59 attached to the web 22 of the metal posts. The curved guideways 58 are closed at their
90 lower ends so as to form solid supports upon which the upper sash 4 is suspended by the catches 57 when the upper sash is in its normal position represented in Fig. 8.

The pivot pins or catches 57 are capable of being withdrawn from the guideways 58 by
95 means of operating levers 60, and when so withdrawn, the upper sash may be lowered so as to ventilate the car from the top when desired. The lower sash 5 is provided at its sides near its bottom with suitable dogs or
100 devices 61 to engage socket pieces or stops 62 attached to the sides of the window frame so as to secure the lower sash in various positions into which it may be adjusted or
105 moved, the said stops also cooperating with the catches 57 to secure the upper sash in its adjusted position.

Provision is made for preventing the upper
sash 4 being moved by frictional contact, when the lower sash 5 is elevated, and for
110 this purpose, the upper sash carries a latch 64 (see Figs. 18 and 19) which is normally projected by a spring 65 beyond the outer face of the sash, so as to engage a stop 66, which forms part of the roof construction.
115

The latch 64 extends into the car and is provided with a cross arm 67, which is adapted to be engaged by a cam or wedge 68 attached to the lower sash 5 (see Figs. 8 and 13). The latch 64 prevents the upper sash
120 from being moved by frictional contact with the lower sash, when the latter is raised to ventilate from the bottom of the window, but is withdrawn from engagement with its stop by the cam or wedge 68 when it is desired to
125 move the upper sash up into the roof.

The runway for the lower sash leads into the space between the roof 2 and the ceiling or inner wall 10 of the top of the car body, and this space is separated into two cham-
130

bers 71, 72, by a sheet metal plate or piece 73 (see Fig. 8), which is extended from post to post.

The upper sash is guided in its movement up into the chamber 71 by the guideways 58 and the lower sash moves with the upper sash practically as one piece, by means of the guides 50, which latter also serve to insure the upper sash moving down with the lower sash when the latter is drawn down out of the chamber 71, thereby preventing the upper sash being accidentally retained in said chamber, when it is desired to close the windows.

The upper and lower sashes may be retained up in the chamber 71 by the catches 61 on the lower sash engaging stops 74 within the said chamber (see Fig. 8).

The chamber 72 contains the curtain 76 having its roller 77 located near the upper end of said chamber and at such height above the car floor as to afford ample clearance or head room for the passengers without danger of the hats of the passengers striking the curtain in the act of rising.

The curtain may be placed in position through an opening in the wall 70, which is covered by a removable cap 78, and the free end of the curtain is accessible from within the car at or near the bottom edge of the inner wall 70 as shown in Fig. 10.

By means of the sheet metal partition 73, the curtain 76 is separated from the window sashes, and opportunity for dust to accumulate on the curtain is materially reduced.

Provision is also made for deflecting water from the roof away from the sides of the car body, and for this purpose, guard pieces or deflectors 80 are provided which extend longitudinally of the car body on the outside thereof, and at an angle thereto, so as to shed the water as it runs down from the roof.

The rain guards 80 project away from the side of the car body and are movable toward the said sides, so as to avoid accidents caused by the rain guard on one car being struck by the side of another car running on a parallel track, in case one car should lurch toward the other. In the present instance, the rain guard 80 is represented in Fig. 8 as pivoted at its upper end to the side of the car body just below the roof and is held out into its operative position by a spring 81. By inspection of Fig. 8, it will be seen that the rain guard 80 is capable of being turned on its pivot so as to have its lower end moved toward the side of the car body under the circumstances above noted.

From the above description, it will be seen, that the car is capable of being converted from a closed car into a semi-open one, and that by the removal of the windows up into the roof, and the panel 6 into the pocket 8, a maximum area of the sides of

the car body is opened for the circulation of air, while at the same time all the parts thus removed remain on the car and are in condition to be brought in a short time into position to form a closed car, in case it is desirable so to do, as for instance in a shower in the summer time. So also, it will be observed, that when the panels 6 are dropped down into their pockets, the sides of the car in line with the seats 14 are open, thereby affording opportunity for the clothing of the passengers to project to and beyond the sides of the car body, and in this manner practically increasing the seating capacity of the car, as the occupants of the seats are afforded more room and are not crowded. It will also be observed that the sides of the car body are materially strengthened by the inclined rods 17, 18, which cooperate with the tie rod 23 to form a truss, and also by the tie rod which connects all the posts in the side of the car body.

It may be preferred to close the pocket 8 by means of the cover 28, which is normally held in its closed position by the latch 31, but it is not desired to limit the invention in this respect, as the pocket may be closed after the manner shown in Fig. 14, wherein the cover 28 is shown as engaging a notch or recess in the wooden facing 38.

Claims.

1. In a railway car of the class described, a car body provided with sills located below the car floor, substantially Z-shaped bars attached to the car floor and upon the lower horizontal portions of which said car sills rest, stationary panels secured to said car sills and extended upward above the car floor to form pockets, and means to close said pockets, substantially as described.

2. In a railway car of the class described, a car body provided with posts in its sides forming openings, a rod extended longitudinally of the car body through a plurality of said posts to tie them together, sleeves on said rod between said posts, separate inclined truss rods extended upwardly from the opposite ends of the sides of said car body, and means to secure the upper ends of said truss rods to said posts, substantially as described.

3. In a railway car of the class described, a car body provided with posts in its sides forming openings, window sills located in said openings above the bottom of the same, brackets attached to posts intermediate the ends of said car, separate truss rods secured at their upper ends to said brackets and inclined downward in opposite directions toward the ends of the car, and a tie rod extended longitudinally of the car body through said posts below said window sills, substantially as described.

4. In a car, a car body provided with openings in its sides, a sash-receiving recess in the

roof above each opening, an upper sash and a lower sash in each opening, the upper sash being arranged to be lowered independently of the lower sash, the lower sash arranged to be raised independently from the upper sash, and both sashes arranged to be raised into the recess in the car roof.

5. In a railway car of the class described, a car body provided with openings in its sides, and having pockets below and in line with said openings and provided with recesses above said openings under the roof of said car, windows comprising upper and lower sashes to close the upper part of said openings and both movable upward into said recesses, and panels to close the lower part of said openings movable downward into said pockets, substantially as described.

6. In a railway car of the class described, a car body provided with openings in its sides, and having pockets below and in line with said openings and provided with recesses above said openings under the roof of said car, means to entirely close the upper part of said openings movable upward into said recesses, and means to close the lower part of said openings movable downward into said pockets, substantially as described.

7. In a railway car of the class described, a car body provided with a space or recess beneath its roof, and a fixed partition extended in the direction of the length of the car to separate said space into chambers, substantially as described.

8. In a railway car of the class described, a car body provided with openings in its sides and with a recess beneath its roof communicating with said openings, a fixed partition in said recess separating the same into outer and inner chambers, windows for said openings movable into said outer chamber, a curtain located in the inner chamber between the said partition and the interior wall of the roof and extended into the window openings, and a removable cap for said curtain attached to the interior wall of the roof, substantially as described.

9. In a railway car of the class described, a car body provided with windows in its sides and with a water guard or deflector extended longitudinally of the car on its outside above said windows and movable toward the side of the car body, substantially as described.

10. In a railway car of the class described, a car body provided with windows in its sides and with a water guard or deflector extended longitudinally of the car on its outside and pivoted at its upper end above said windows, and yielding means to engage said deflector and hold its lower end away from the side of the car body, substantially as described.

11. In a railway car of the class described, a car body provided with posts in its sides, a

tie rod extended longitudinally of the car body through a plurality of said posts to tie them together, and separate inclined rods extended from near the opposite ends of the car body toward the center of the same and cooperating with said tie rod, substantially as described.

12. In a railway car of the class described, a car body provided with openings in its sides and with a recess beneath its roof communicating with said openings, windows for said openings movable into said recess and comprising an upper and a lower sash, a device carried by the upper sash, and a stop with which said device cooperates to prevent the upper sash from being moved by the lower sash until said device is released from its stop, substantially as described.

13. In a railway car of the class described, a car body provided with openings in its sides and with a recess beneath its roof communicating with said openings, windows for said openings movable into said recess and comprising an upper and a lower sash, a device carried by the upper sash, a stop with which said device cooperates to prevent the upper sash from being moved by the lower sash until said device is released from its stop, and means on the lower sash for engaging said device and withdrawing it from engagement with its stop, substantially as described.

14. In a railway car of the class described, a car body provided with posts in its sides forming openings, brackets attached to said posts intermediate the ends of the car and provided with downwardly inclined sockets, truss rods having their upper ends extended into said sockets and inclined downward in opposite directions toward the ends of the car, and means to secure the lower ends of said truss rods to said car body, substantially as described.

15. In a railway car of the class described, a car body provided with posts in its sides forming openings, brackets attached to said posts and provided with downwardly inclined arms having threaded sockets, a substantially horizontal tie rod extended through said brackets and posts, and downwardly inclined truss rods separate from said tie rod and having their upper ends threaded to engage said threaded sockets, substantially as described.

16. In a railway car of the class described, a car body provided with posts in its sides forming openings, brackets attached to said posts, a substantially horizontal tie rod extended through said brackets and posts to tie the latter together, and inclined truss rods independent of said tie rod and each other, and detachably secured at their upper ends to said brackets, substantially as described.

17. In a railway car of the class described, a car body provided with substantially T- 130

shaped metal posts in its sides forming openings, brackets attached to the outer side of the web of two of said posts, a tie rod extended through said brackets and the webs of the posts to which the brackets are secured and through the webs of the posts intermediate the posts to which the brackets are secured, sleeves encircling said tie rod between adjacent posts, and separate truss rods detachably secured at their upper ends to the said brackets and downwardly inclined toward the ends of the car body, substantially as described.

18. In a car, a car body provided with openings in its sides, a sash-receiving recess in the roof above each opening, an upper sash and a lower sash in each opening, the upper sash being arranged to be lowered independently of the lower sash, the lower sash arranged to be raised independently from the upper sash, means to sustain the upper sash in adjusted position, and means on the lower sash to engage the upper sash when said lower sash is raised whereby both sashes may be carried simultaneously into the recess in the roof.

19. In a railway car of the class described, a car body provided with openings in its sides and with a space or recess beneath its roof communicating with said openings, a fixed partition in said recess forming with the roof an outer chamber and with the inner wall of the roof an inner chamber, windows for said openings movable into said outer chamber, and curtains for said openings located in said inner chamber, substantially as described.

20. In a railway car of the class described, a car body provided with openings in its sides and with a space or recess beneath its roof communicating with said openings, a partition in said recess forming with the roof an outer chamber and with the inner wall of the roof an inner chamber, windows for said openings movable into said outer chamber, curtains for said openings located in said inner chamber, and a removable cap for said curtain attached to the inner wall of the roof substantially remote from said openings, substantially as described.

21. In a railway car of the class described, a car body provided with openings in its sides and having pockets below and in line with said openings and provided with recesses above said openings under the roof of said car, window sills extended across said open-

ings above said pockets, windows comprising upper and lower sashes to close the openings above the window sills and both movable up into the recesses under the roof, and panels to close the opening below the window sill movable downward into said pockets, substantially as described.

22. In a railway car of the class described, a car body provided with openings in its sides and having pockets below and in line with said openings, window sills located in said openings above said pockets, means to close the part of said openings above said window sill, separate devices to close the part of said openings below said window sill, said devices being movable downward into said pockets, covers located below said window sill to normally close said pockets, and means controlled by said devices for locking said covers in their closed position when said devices are in their operative position.

23. In a railway car of the class described, a car body provided with openings in its sides and having pockets below and in line with said openings, means to close the upper part of said openings, devices to close the lower part of said openings movable downward into said pockets, covers to normally close said pockets movable downward therein, and levers to lock said covers in their closed position.

24. In a railway car of the class described, a car body provided with openings in its sides and having pockets below and in line with said openings, means to close the upper part of said openings, panels to close the lower part of said openings movable downward into said pockets, and cams to hold said panels in their closed position, substantially as described.

25. In a railway car of the class described, a car body provided with openings in its sides and having pockets below and in line with said openings, means to close the upper part of said openings, devices to close the lower part of said openings movable downward into said pockets, and springs cooperating with devices to hold them in their closed position, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

MYRON ROUNDS.

Witnesses:

H. K. HICKMAN,
F. CALDERWOOD.