



Sept. 22, 1925.

1,554,449

E. J. MADDEN

AUTOMOBILE TOP

Filed Dec. 4, 1922

4 Sheets-Sheet 2

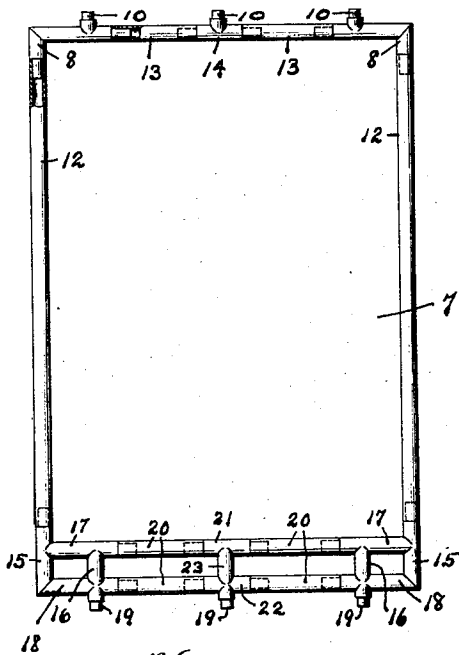


Fig. 2.

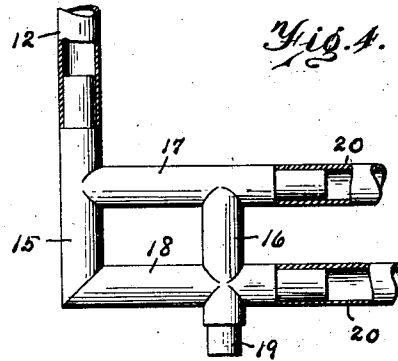


Fig. 4.

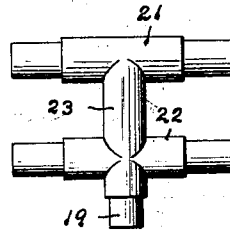


Fig. 5.

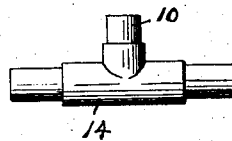
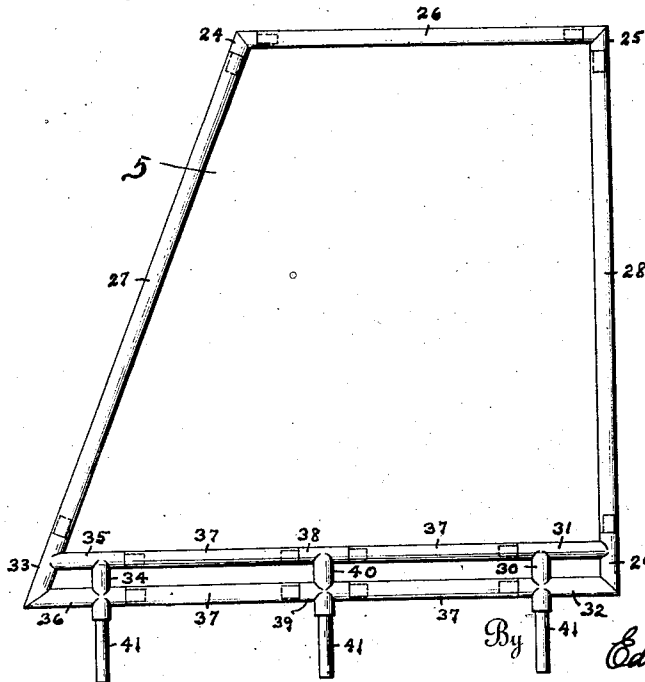


Fig. 6.

Fig. 3.

Inventor

E. J. Madden

By Edward N. Pappe  
Attorney

Sept. 22, 1925.

1,554,449

E. J. MADDEN

AUTOMOBILE TOP

Filed Dec. 4, 1922

4 Sheets-Sheet 3

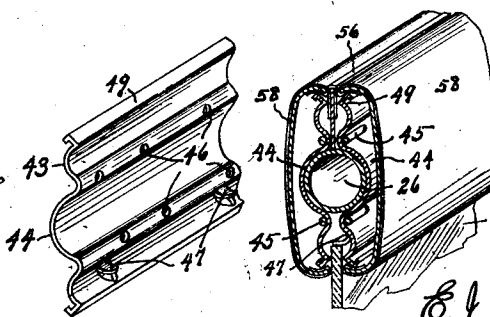
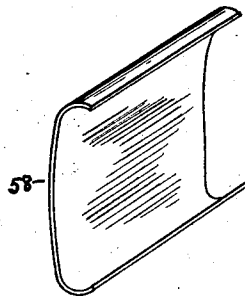
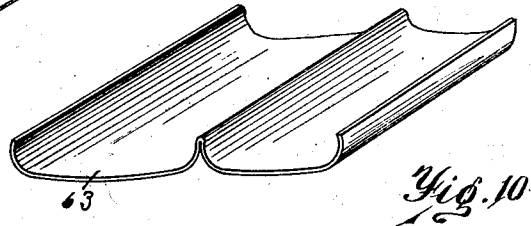
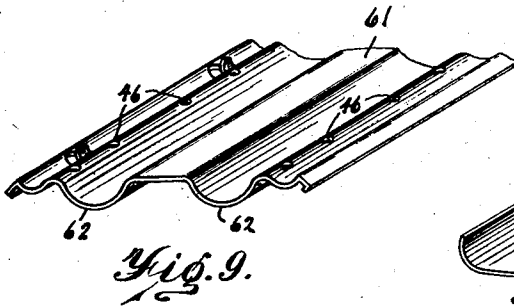
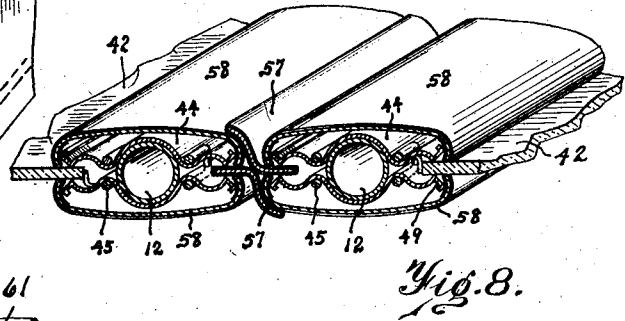
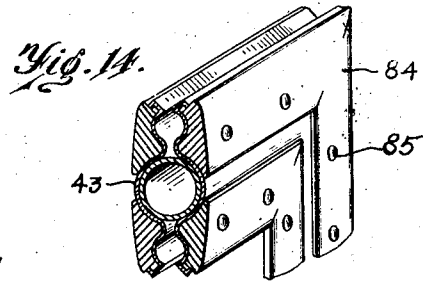
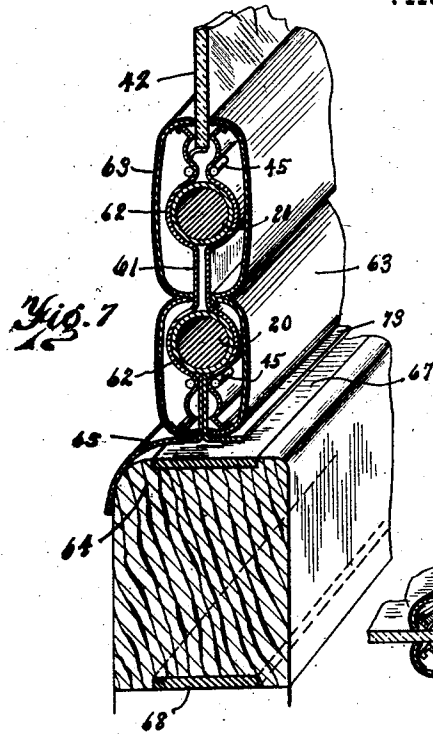


Fig. 11  
Inventor

Fig. 13

Fig. 12.

By

E. J. Madden  
Edward N. Pagelow  
Attorney

Sept. 22, 1925.

1,554,449

E. J. MADDEN

AUTOMOBILE TOP

Filed Dec. 4, 1922

4 Sheets-Sheet 4

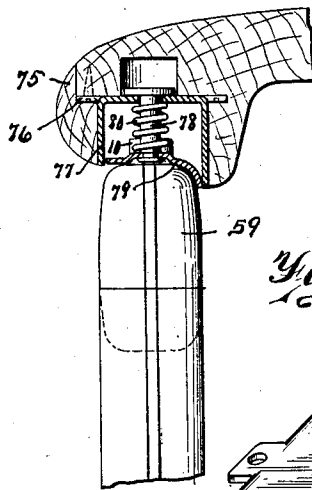


*Fig. 15.*

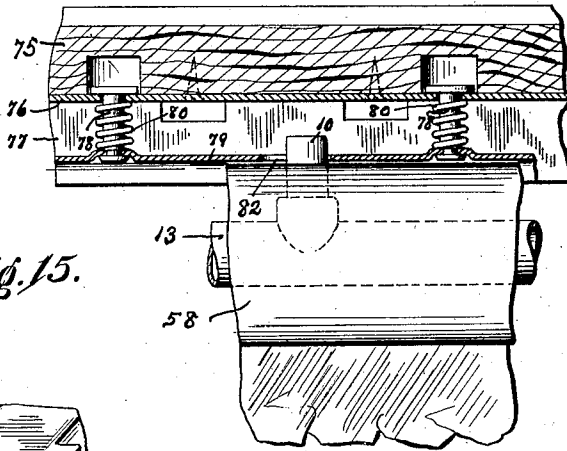


*Fig. 16.*

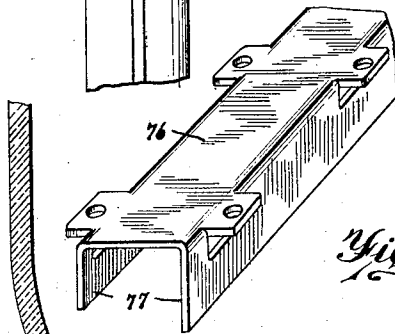


*Fig. 18.*

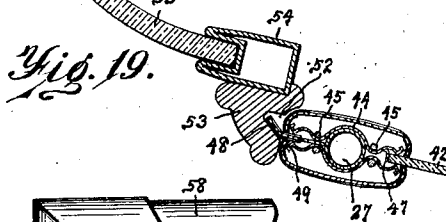


*Fig. 19.*

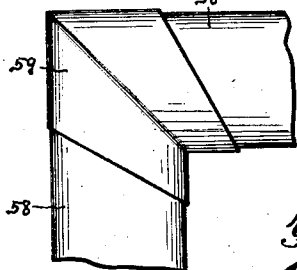


*Fig. 20.*

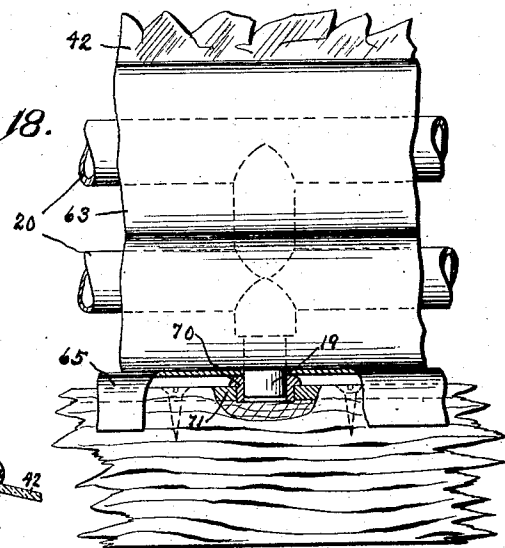


*Fig. 17.*

Inventor

E. J. Madden

By

Edward N. Pagelen  
Attorney

Patented Sept. 22, 1925.

1,554,449

# UNITED STATES PATENT OFFICE.

EDWARD J. MADDEN, OF DETROIT, MICHIGAN.

## AUTOMOBILE TOP.

Application filed December 4, 1922. Serial No. 604,685.

*To all whom it may concern:*

Be it known that I, EDWARD J. MADDEN, a citizen of the United States, and residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Automobile Top, of which the following is a specification.

This invention relates to the construction of transparent removable panels adapted to constitute the walls of vehicle body tops, particularly the tops of automobiles, and its object is to provide structures of this character which are readily positioned and as readily removed, and to provide frames for such panels with resilient members whereby the panels will be held securely in position and be prevented from rattling.

This invention consists in a window comprising a frame and glass mounted therein, the frame having pins projecting from its lower edge in the plane of the glass and adapted to extend into holes in the rail constituting the upper edge of the side of the vehicle body, and in resilient means mounted in the vehicle deck for engaging the upper edges of said window panels to retain them in position.

It also consists in a rigid frame-work for the deck of the vehicle top, and resilient engaging devices to secure the upper edges of window panels constituting portions of the side walls of said top.

It further consists in a novel frame structure to receive the glass.

It also consists in the details of construction illustrated in the accompanying drawings and particularly pointed out in the claims.

In the drawings, Fig. 1 is a side elevation of a vehicle top embodying the present invention. Fig. 2 is an elevation of the frame of a panel. Fig. 3 is a tubular frame of a panel adapted to be attached to a front door. Figs. 4, 5 and 6 are details of the metal frame. Fig. 7 is a section of the lower portion of a panel and the top rail of a door. Fig. 8 is a section of vertical portions of two side members of adjacent panels. Figs. 9, 10, 12 and 13 are details of the side members of the panels. Fig. 11 is a vertical section of the upper member of a panel frame. Fig. 14 is a detail of a corner of a frame. Fig. 15 is a cross section of a retainer in the deck of the top for the upper edge of a panel. Fig. 16 is a longitudinal section thereof. Fig. 17 is a detail

showing the means for securing a panel to the upper rail of the body. Fig. 18 is a perspective of one end of a guide channel. Fig. 19 is a horizontal section of one edge of a windshield and the support therefor. Fig. 20 is an elevation of a panel corner. Fig. 21 is a transverse section of the top rail of a door showing the lower edge of a panel secured in position and overlapping each other.

Similar reference characters refer to like parts throughout the several views.

The present invention involves glazed door and wall panel frames for converting open bodies of vehicles into closed bodies, the wall panels being stationary and secured at both upper and lower edges and the door panels being attached at their lower edges to the doors of the body. Each panel is freely removable and the appearance of the vehicle is not affected by unsightly additions or projections. The general construction of the frames of these panels is the same and comprises tubes and connectors therefor, clamping plates to secure the sheets of glass in position, and the metal shells which connect to and enclose the clamping plates.

Fig. 1 shows a vehicle body A having doors 1 and 2 and a deck B. The panels 5 and 6 extend up from the doors to the deck and are separated by the stationary wall panel 7. A rear wall panel 3 extends from the door panel 6 to the curved back 4 of the top. The frame for the panel 7 consists of corners 8 having reduced ends extending into the tubes 12 and 13, and a central connector 14 also having reduced ends to receive the tubes 13, the corners 8 and central connector 14 having upwardly extending pins 10 to engage proper devices in the deck. The lower portion of the frame consists of two parallel bars joined at intervals to obtain great strength. The ends of this lower portion consist of the upright parallel members 15 and 16, and the horizontal parallel members 17 and 18. The members 15 have reduced ends extending into the tubes 12, the members 16 terminate in pins 19, while the horizontal members have reduced ends that extend into tubes 20 which also receive the reduced ends of the horizontal portions 21 and 22 which are connected by a vertical member 23 which terminates in another pin 19.

The frame of the rear panel 3 is constructed similarly to the frame shown in

Fig. 2, excepting that it is longer and has rounded rear corners. The frame for the panel 5 has upper corners 24 and 25 connected by the tube 26, and also connected  
 5 side tubes 27 and 28. A lower rear corner member consists of upright parts 29 and 30 and horizontal parts 31 and 32. The lower front corner consists of the inclined part 33, upright part 34 and horizontal parts 35  
 10 and 36. The tubes 37 connect the corners to the central member consisting of the horizontal parts 38 and 39 and vertical part 40. There are no upwardly extending pins as shown in Fig. 2, and the downwardly  
 15 extending pins 41 are longer than in panel 7.

In order to mount panes 42 of glass on these frames I provide clamping plates 43 (Figs. 11 and 12) having central cylindrical portions 44 adapted to fit the frames, these  
 20 plates being in pairs secured together by staples 45 which extend through the holes 46. The small struck-up tongues 47 engage the edges of the panes of glass to position the glass. Where these plates 43 cover the  
 25 inclined tube 27 of the panel 5, I prefer to insert a weather strip 48 between the edges 49 opposite the glass, as shown in Fig. 19, in order that this strip may extend into the groove 52 of the frame member 53 which  
 30 also supports the channel 54 constituting the sash for the windshield 55. Where no such weather strip 48 is necessary, as along the tops of the door panels, a spacing strip 56 may be inserted, as shown in Fig. 11.

At the vertical lines where the stationary and movable panels come together, the packing strips 57 are preferably secured between the clamping plates 43, as shown in Fig. 8, to  
 35 keep out rain and snow. After the plates 43 are secured to the frames, the resilient channel-shaped cover plates 58 are sprung into place, the resilient corner pieces 59 shown in Fig. 20 fitting over the ends of  
 40 these cover plates and holding themselves in position. The cover plates 58 and the corner pieces 59 may be covered with fabric or leather or enameled if desired. In Figs.  
 45 7, 8 and 11 I have shown this coating on these cover plates by the double lines.

The clamping plates 61 shown in Fig. 9 have two cylindrical portions 62 to engage the horizontal tubes 20 or 37 of the panels and also have the holes 46 to receive staples  
 50 45. The cover plates 63 are again resilient and their edges are snapped over these clamping plates as shown in Fig. 7. The upper edges 64 of the doors are often called  
 55 rails and are formed with holes to receive the thimbles 66, as shown in Fig. 21, into which the pins 41 extend and are securely held. The upper edge of a weather strip 65 is secured between the clamping plates 61 and this strip extends down outside of the upper  
 60 edge of the door. The pins 41 are sufficiently strong to hold the panels 5 and 6 in

alinement with the doors and the extra longitudinal members at the bottoms of the frames of these panels give sufficient strength to prevent the frame from bending, even  
 70 when the doors are slammed. If desired, the metal strips 67 and 68 may be used to reinforce the rails as shown in Figs. 7 and 21 and provide proper support and spacing for the thimbles 66.

The pins 19 extending down from the frames of the wall panels 3 (Fig. 17) and 7  
 75 are preferably received in short thimbles 70 mounted in the metal strip 71 let into the top edge of the body. The weather strips 65 and 73 are secured at their upper edges  
 80 between the clamping plates 61 and overlap the body as indicated in Fig. 7. Extending along the sides of the deck are rigid members 75, preferably of wood, as shown in Figs.  
 85 15 and 16, and these members are grooved along their lower sides to receive the channels shown in Fig. 18 having bottoms 76 and sides 77. Pins 78 are mounted in each  
 90 channel and carry the strips 79 adapted to receive the upper edges of the wall panels, being pressed against the panel by the  
 95 springs 80. These strips are formed with slots 82 to receive the pins 10 along the upper edge of each wall panel. I prefer the lengths of the channels and the strips  
 100 79 to be no greater than the lengths of the panels. Figs. 15 and 16 show the panel just as it engages the strip 79. The strip is pressed up some distance to compress the  
 105 springs 80 before the pins 19 can enter the thimbles 70 and remain compressed even when the panel is in position.

In Fig. 14 is shown a corner reinforcement for the frames consisting of a pair of elbows 84 provided with grooves to receive the  
 110 clamping plates 43 and holes 85 to receive bolts or rivets by means of which the two elbows may be secured together.

The panels shown may be easily removed and replaced. The door panels are merely  
 115 lifted off. The wall panels are lifted up to free the pins 19 from the thimbles 70 and the lower ends are then swung out and the panels lowered to release the pins 10 from the  
 120 pressure strips 79. These pressure strips prevent the upper ends of the wall panels from rattling and also prevent the wall panels from getting out of place when the vehicle travels over roads sufficiently rough  
 125 to twist the top.

The top with the panels in position is substantially weather-proof and has the appearance of a permanently closed structure but embodies the advantages of an open  
 130 top for summer use.

The details of construction and the proportions of the parts may all be changed by those skilled in the art without departing from the spirit of my invention as set forth  
 135 in the following claims.

I claim:—

1. A frame for a side panel for a closed vehicle body consisting of connected top, side and bottom members, pairs of supporting plates attached to and fitting each of the side members, a pane of glass held between the inner portions of said pairs of supporting plates, means to secure said plates to the panel frame, and weather strips secured between the outer edges of said plates and projecting therefrom.

2. A frame for a side panel for a closed vehicle body consisting of connected top, side and parallel bottom members all in the same plane, said bottom members being tubular and spaced apart in said plane, and connecting members between the parallel bottom members embodying downwardly extending pins whereby the panel may be attached to the vehicle body.

3. A frame for a side panel for a closed vehicle body consisting of connected top, side and parallel bottom members all in the same plane, connecting members between the parallel bottom members embodying downwardly extending pins whereby the panel may be attached to the vehicle body, pairs of clamping plates having cylindrical central portions adapted to fit the frame members, a pane of glass held between said pairs of clamping members, and means to secure the members of each pair together.

4. A frame for a side panel for a closed vehicle body consisting of connected top, side and parallel bottom members all in the same plane, connecting members between the parallel bottom members embodying downwardly extending pins whereby the panel may be attached to the vehicle body, pairs of clamping plates having cylindrical central portions adapted to fit the frame members, a pane of glass held between said pairs of clamping members, means to secure the members of each pair together, and cover plates enclosing said clamping plates.

5. A frame for a side panel for a closed vehicle body consisting of connected top, side and bottom members all in the same plane,

downwardly extending pins whereby the panel may be attached to the vehicle body, pairs of supporting plates having cylindrical central portions adapted to fit the frame members, a pane of glass held between said pairs of supporting members, means to secure the members of each pair together, and a weather strip mounted between the outer edges of a pair of supporting plates along one edge of said frame.

6. A frame for a side panel for a closed vehicle body comprising parallel upright frame members, pairs of clamping plates having cylindrical central portions adapted to fit the frame members, a pane of glass between said pairs of clamping members, means to secure the members of each pair together, and cover plates enclosing said clamping plates.

7. In combination, a vehicle body having vertical holes along its upper edge, a top comprising a back and a deck having rigid longitudinal members along its sides, a vertical wall panel resting on the body and having pins at its lower edge extending into the holes in said body and having upwardly extending pins along its upper edge, an engaging strip along one of the rigid members of the deck having holes to receive the upper pins of the panel, springs to press said strip against the panel, channels mounted in the rigid side member of the top adapted to receive and guide said strip, and pins mounted in said channel to guide the springs.

8. A frame for a side panel for a closed vehicle body consisting of connected top and parallel side members all in the same plane, a pair of clamping plates having cylindrical central portions adapted to fit one of said frame members, a pane of glass between said pair of clamping members, means to secure the members of said pair together, cover plates enclosing said clamping plates, and a flexible packing strip held between said pair of clamping plates and extending in the opposite direction from said pane of glass.

EDWARD J. MADDEN.