United States Patent

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[54] **BACK-SUSPENDED CANTILEVER SEAT**
7 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **297/450,** 297/232, 297/451, 296/64
[51] **Int. Cl.** **B60n 1/00,** A47c 5/00, A47c 7/00
[50] **Field of Search** 297/216, 244, 232, 250, 445, 450, 454–457; 5/118; 312/248; 248/201, 235; 108/42, 47, 108, 152; 52/27; 296/64

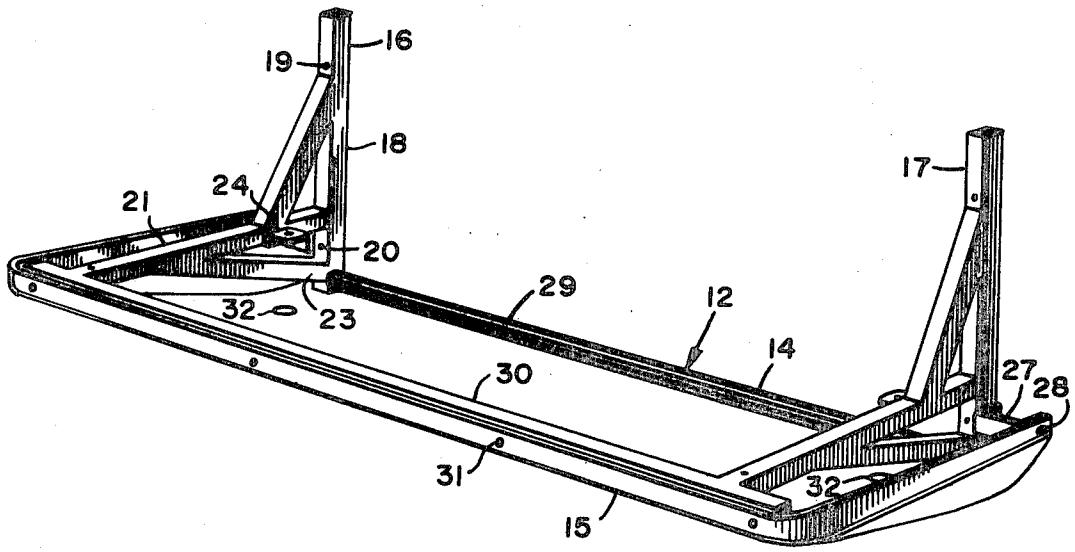
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ABSTRACT: A longitudinal wall-supported cantilever seat has vertical posts anchored to a vehicle wall and seat-supporting arms carried by the posts and braced by diagonal struts, the arms supporting a tubular frame carrying a plastic shell seat.



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SHEET 1 OF 3

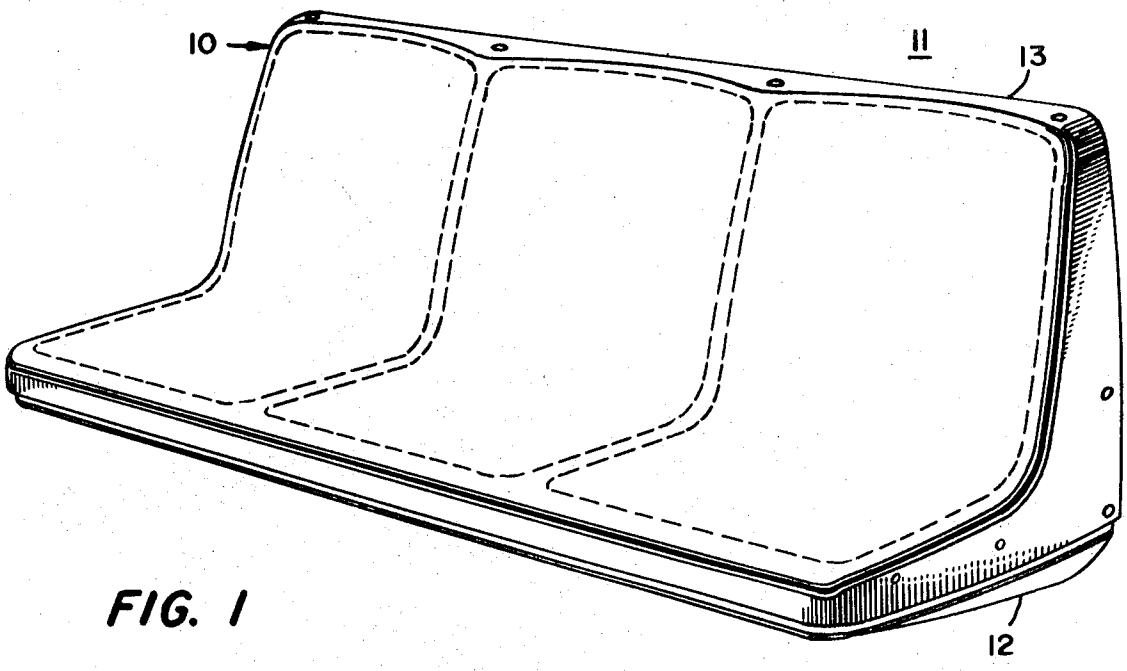


FIG. 1

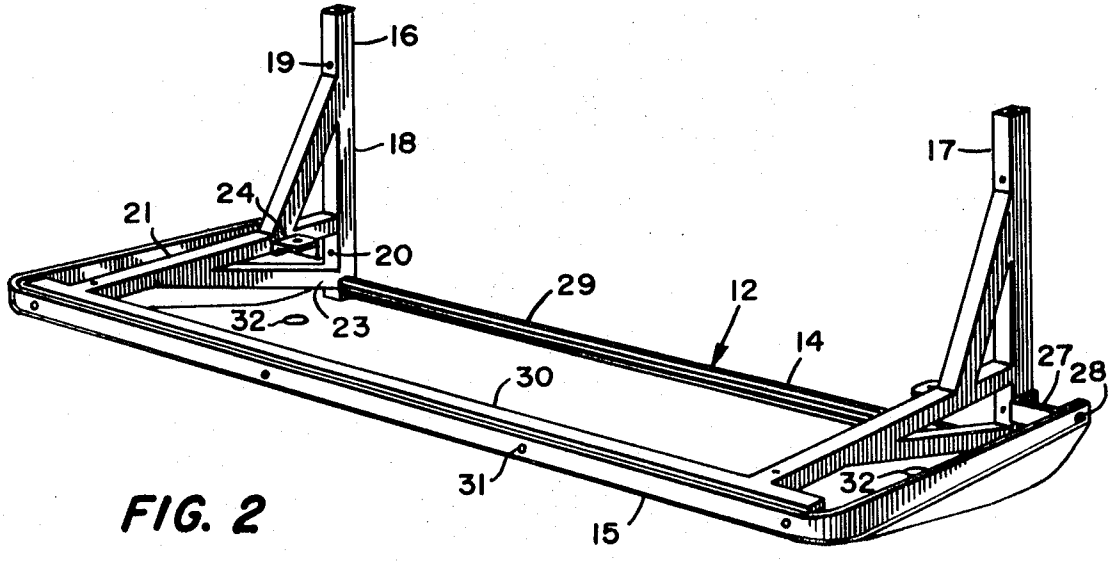


FIG. 2

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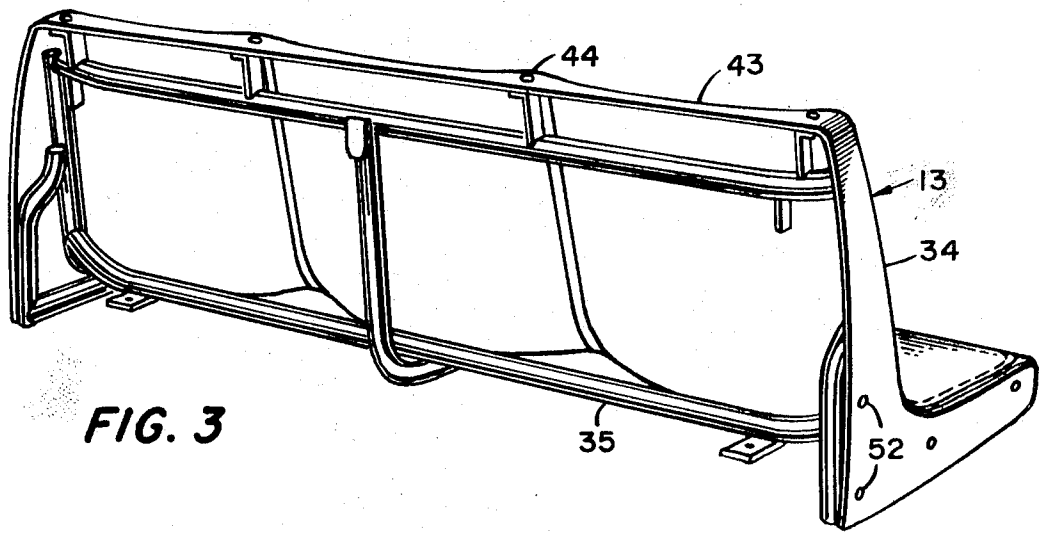


FIG. 3

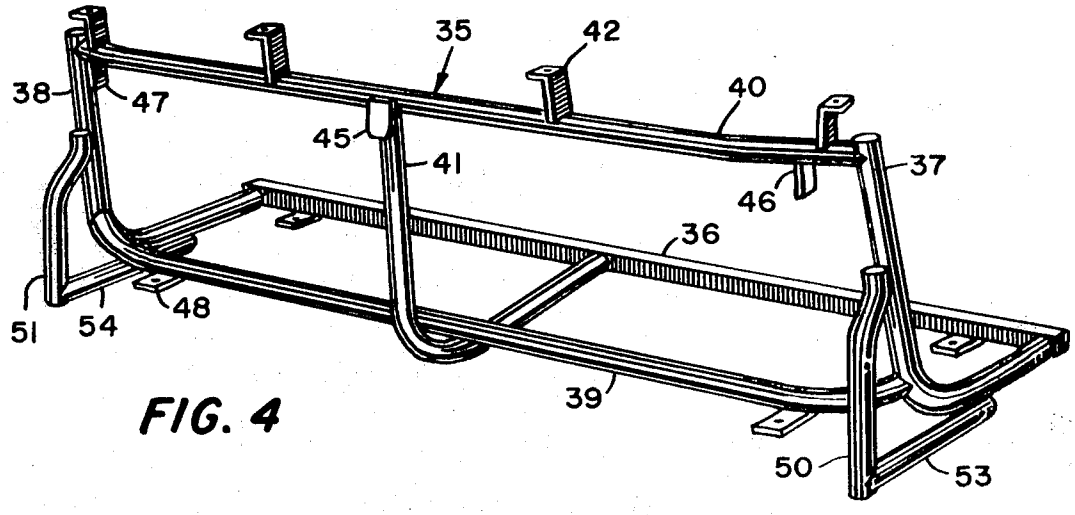


FIG. 4

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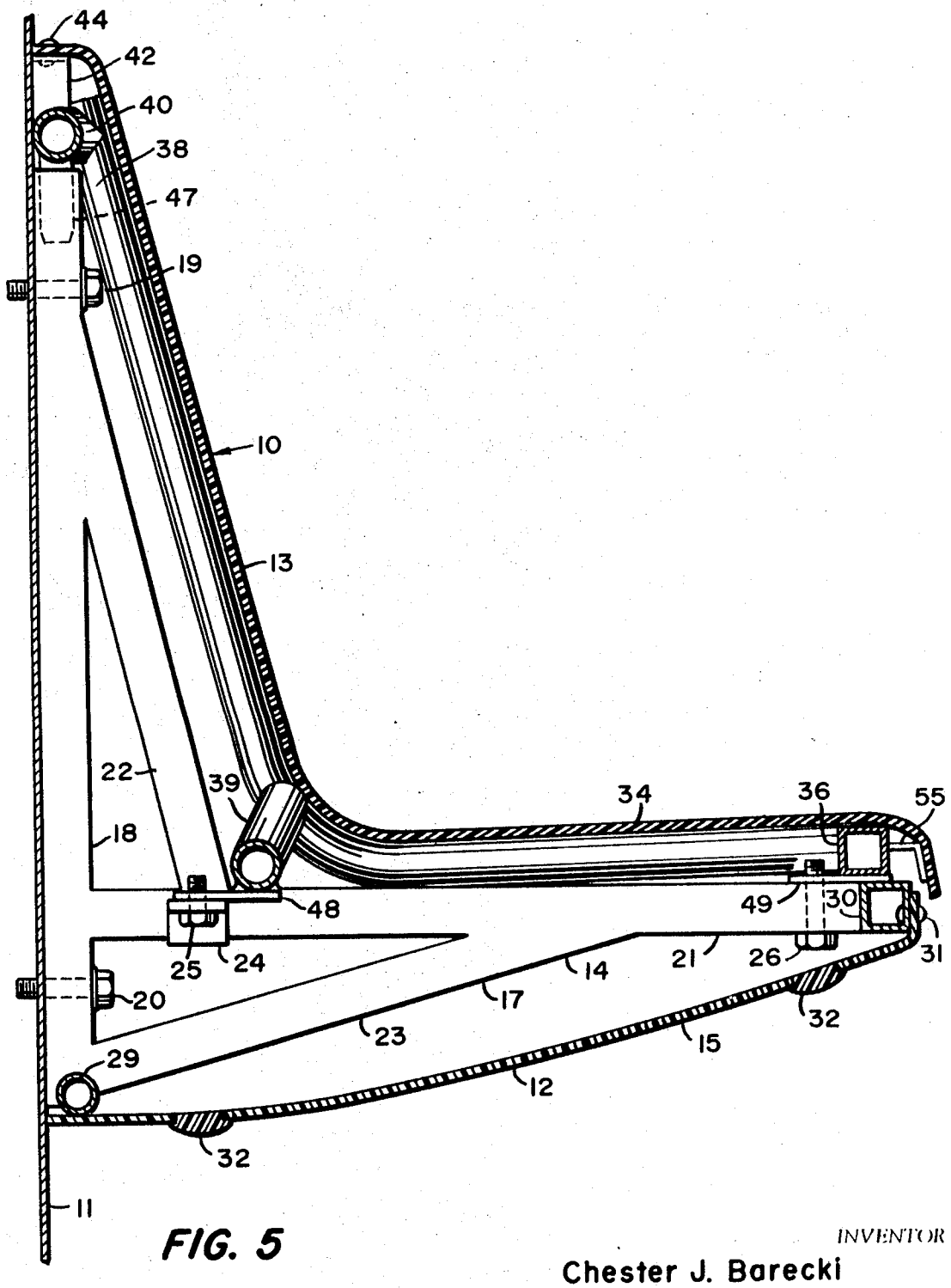


FIG. 5

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BACK-SUSPENDED CANTILEVER SEAT

BACKGROUND AND SUMMARY

In a conventional passenger vehicle, the legs and pedestals supporting the passenger seats make it difficult to clean the vehicle in a short time while also interfering with the feet of passengers and making it difficult to store luggage and articles. At the same time it is clear that any attempt to suspend seats upon a vehicle wall presents a problem because of the stresses applied to the seat from different angles during use. I have discovered that a cantilever seat of the longitudinal type can be successfully suspended and one which will resist stresses imposed upon the corners and other areas of the seat by securing posts to the wall of the vehicle and bracing forwardly extending arms carried by the posts in a manner described hereinafter. The structure also includes a tubular frame for carrying a plastic shell upon the support arms of the frame. With this structure, a speedy cleaning of the car can be made with a gang-type sweeper or other sweeper device and a free space is provided below the longitudinal seat for the comfort of passengers, while also providing luggage stowing space, etc.

DRAWINGS

In the accompanying drawings,

FIG. 1 is a front perspective view of a three-passenger seat suspended upon a wall;

FIG. 2, a perspective view of the seat-supporting frame with the plastic shell removed;

FIG. 3, a rear perspective view of the seat portion of the chair showing the metal frame under the plastic shell;

FIG. 4, a rear perspective view of the seat frame; and

FIG. 5, a sectional view of the chair unit showing the manner in which it is attached to a vehicle wall and the relation of the frame and plastic parts.

DETAILED DESCRIPTION

In general, a longitudinal support frame is anchored upon a vehicle wall with its rear or backside resting against the wall, and in this structure vertical support posts are secured to the wall, the posts carrying horizontal seat-supporting arms extending forwardly therefrom. A seat is carried by the arms and a diagonal strut extends from an upward portion of each post and is connected to the seat arm therebelow forwardly of the post. Also, an upwardly extending strut extends from a lower end portion of each post to the arm thereabove.

Referring to the drawings, a cantilever-type longitudinal seat **10** is attached to the wall **11** behind it and needs no other support. The chair unit or seat **10** consists of a lower-supporting frame unit **12** and an upper seat unit **13**. The lower-supporting unit **12** consists of a metal frame **14** encased in a one-piece plastic shell **15**.

The metal frame **14** has a right end structure **16** and a left end structure **17**. Each has a square vertical tube or post **18** which attaches to the wall with an upper bolt **19** and a lower bolt **20**, a horizontal square tube **21** which supports the seat unit **13**, an upper diagonal brace **22** forming a triangle for strength, a lower diagonal brace **23** also forming a triangle, and an attachment angle **24** through which a bolt **25** passes to attach the seat unit **13**. A second and longer bolt **26** passes through the horizontal square tube **21** to attach the seat unit. A bracket **27** is provided for holding the ends of the plastic shell **15** with a rivet **28**.

The two structures **16** and **17** are held together by a round stretcher tube or member **29** and a square stretcher tube **30**, and the plastic shell is attached to the square tube in several places with rivets **31**.

There are openings in the plastic shell below the four bolts which attach the seat to the base to allow a ready entrance of the bolts for attachment, and such openings may be closed with plastic plug caps **32**.

The upper seat unit **13** has a single piece plastic shell **34** concealing the metal seat frame **35**. Frame **35** consists of a horizontally positioned square front stretcher tube **36**, round right end tube **37**, and round left end tube **38**. There is also a rear stretcher tube **39**, a top stretcher tube **40**, and a center tube **41** which attaches to the top tube and rear tube and then turns to attach to the center of the front stretcher. Several shell support angles **42** along the top stretcher provide attachment to the shell upper edge **43** with rivets **44**. A suspended tongue **45** at the upper end of the center tube provides attachment to the wall **11** by means of a metal strap (not shown). There are two projections **46** and **47** from the underside of the top stretcher **40** which fit snugly into the upper ends of the hollow posts or tubes **18** of the right and left end structures **16** and **17** respectively. There are two rear plates **48** attached to the bottom side of the rear stretcher to receive bolts **25** and two-front plates **49** attached to the bottom of the front stretcher to receive the long bolts **26**.

Shell-stabilizing tubes **50** and **51** are attached to the right and left end tubes **37** and **38** respectively and to which the shell sides are riveted at **52**, and support tubes **53** and **54** add stiffness to the stabilizing tubes. Several support angles **55** are provided to support the front edge of the shell and are cemented to the underside of the edge of the shell. The shell is a smooth plastic body that can be quickly cleaned and there are no rivets exposed along the front edge of the seat that might snag clothing, etc.

While in the foregoing specification I have set out specific structure in considerable detail for the purpose of illustrating the invention, it will be understood that such details may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A cantilever seat adapted to be suspended from the backside thereof upon a vehicle wall, comprising vertical posts in spaced relation, stretcher means connecting said posts, means for anchoring said posts upon a vehicle wall, arms carried by said post at an intermediate position on said posts and projecting forwardly in a generally horizontal plane, a seat structure carried by said arms, a diagonal strut on each post connecting an upper portion of said post and an intermediate portion of the arm below, and a second strut connecting a portion of each post extending below the arm with an intermediate portion of the arm above whereby said arm is held between portions of said post above and below the point of junction of said arm and posts.

2. The structure of claim **1** in which said post is provided with means for anchoring said post to said wall at a point between said struts.

3. The structure of claim **2** in which said stretcher connects the lower ends of said posts below said arms and below said anchoring means.

4. The structure of claim **1** in which a tubular seat support carries said seat and is secured to said support frame.

5. The structure of claim **1** in which said posts are hollow at their upper ends and said tubular support is provided with depending projections extending into said posts.

6. The structure of claim **4** in which said seat is a plastic shell carried by said tubular seat support.

7. The structure of claim **4** in which said tubular seat support is provided at its lower sides with rearwardly extending braces for supporting the rear sides of said shell.

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