Nov. 2, 1943. A. O. WILLIAMS 2,333,223

SIDE SILL CONSTRUCTION

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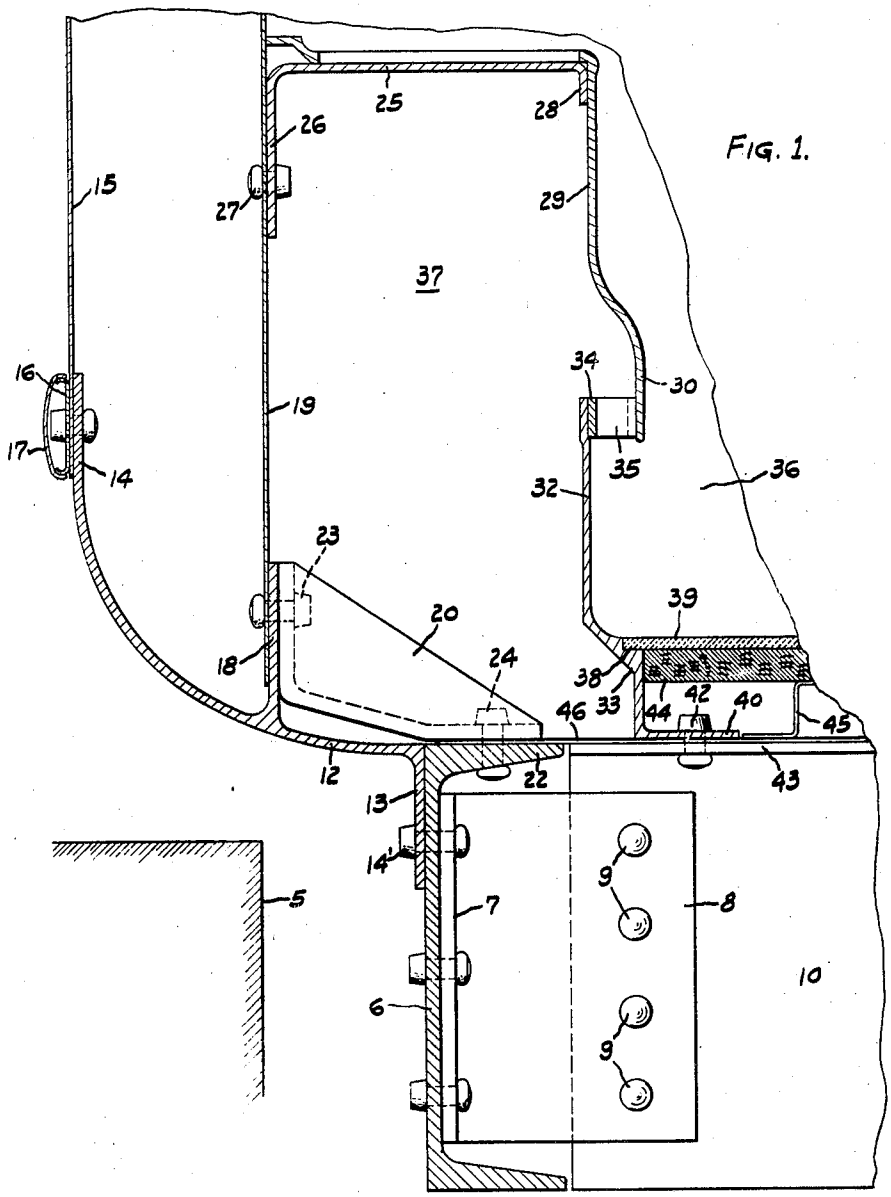


FIG. 1.

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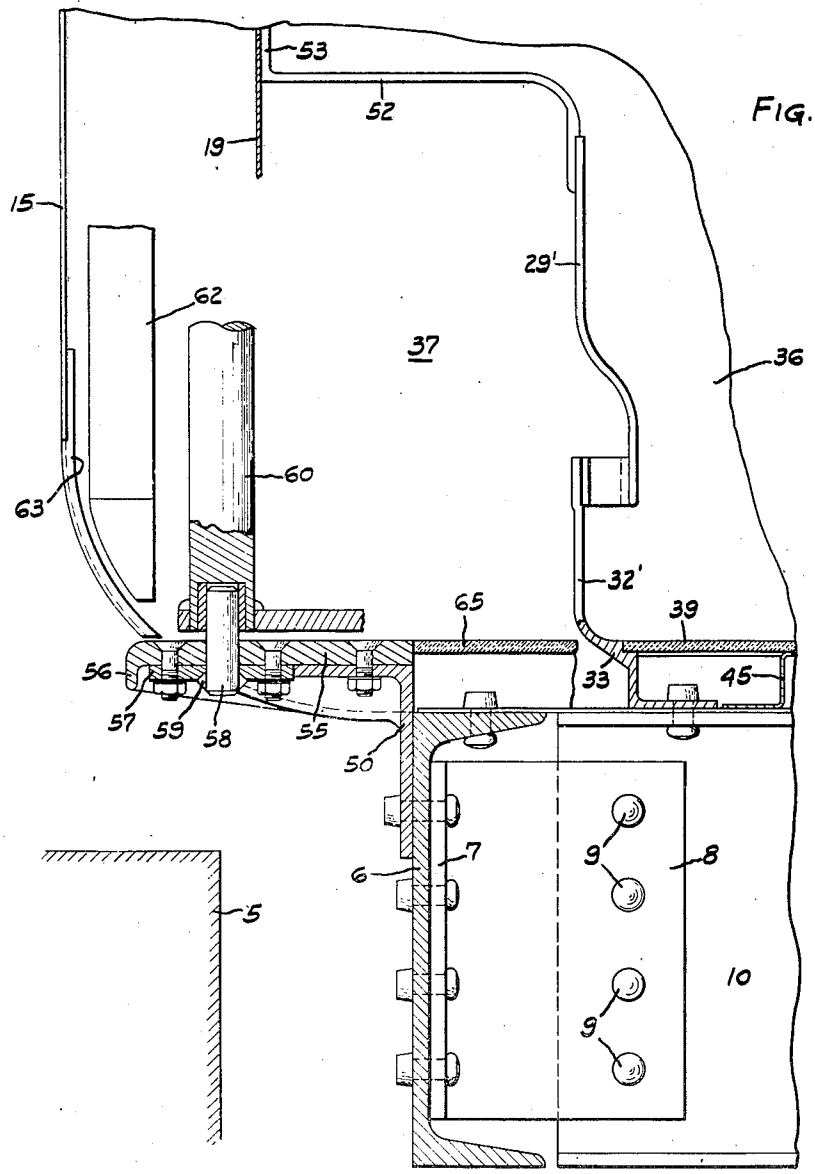


FIG. 2.

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SIDE SILL CONSTRUCTION

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3 Claims. (Cl. 105—418)

This invention relates to a side sill construction for rail cars, such as sub-way and elevated train cars, which are adapted to stop for unloading and loading passengers at elevated platforms or stations where the platform is located above the rail a distance substantially approximating the height of the floor of the car from the rail.

It has been found desirable in the construction of newer types of cars of this nature to provide a wider car body in order to accommodate more passengers, but with such wider bodies, considerable difficulty is occasioned due to the fact that the platforms extend to a point such that the wider car bodies will not clear the same unless the platform is cut off. However, to cut off the platform would leave too wide a gap insofar as the older conventional types of cars are concerned between the edge of the platform and the door opening.

The present invention contemplates a solution of this difficulty by retaining the desirable feature of a wide car body and yet not disturbing the platform construction at the stations so that both the old and new type of cars can be used at the same station platform.

In the particular embodiment of the invention herein described, this result is accomplished by providing a novel type of car sill construction in conjunction with the floor and door opening of the car body.

Other objects and advantages of the present invention will appear more fully from the following detailed description which, taken in conjunction with the accompanying drawings, will disclose to those skilled in the art the particular construction and operation of a preferred form of the present invention.

In the drawings:

Figure 1 is a sectional view through one side of a car body showing the sill construction at a point in the body intermediate a door post and an end post; and

Figure 2 is a corresponding sectional view of the side wall and sill construction of a car body taken substantially between two door posts.

Referring now in detail to Figure 1, I have disclosed a station platform generally at 5. This platform may be constructed of concrete, brick, wood, or the like, and the details of the station platform construction forms no part of the present invention.

The car body consists of side sill members including the longitudinal channels 6 to which are riveted the angle plates, the plates 7 having normally extending flanges 8, which are riveted as at 9 to cross beams or girders 10. This forms the basic sub-frame of the car body. Mounted on the outer face of the channel 6 adjacent its upper edge is an extruded longitudinally extending section 12 having the flange 13 riveted, as at 14, to the channel and also to the plate. The member 12 has a smoothly rounded curved portion terminating in the vertically extending end 14, to which is riveted the side wall 15 of the car body and the ornamental bead or molding retaining strip 16 over which the molding 17 is pressed. Intermediate the flange 13 and the end 14, the member 12 is provided with a second vertical flange 18 to which is riveted the vertically extending plate or sheet 19 forming the inner wall of the car body, there being a suitable reinforcing bracket or brace member 20 riveted to the flange 18 and also riveted to the upper flange 22 of the channel 6 as by means of rivets 23 and 24, respectively. For purposes of providing ventilation, heating and cooling of the car body, there are provided longitudinal ducts above the sill member 6. These ducts are formed by the channel-shaped longitudinally extending channel member 25 having one flange 26 riveted as at 27 to the inner sheet or wall 19 of the car body, and having the opposite flange 28 forming an abutment for the depending flange 29, which closes the inner side of the channel 25.

The flange 29 is provided with an offset portion 30 which forms with the vertically extending flange 32 of the floor supporting member 33 a passageway in which is inserted the grill or opening 34 allowing the entrance of air through the openings 35 therein into the box type conduit formed along the longitudinal sides of the car. Thus, cold air may be withdrawn from the interior 36 of the car body into the conduits 37, and thence drawn to any suitable air conditioning means. The floor supporting member 33 is provided with a recessed shoulder portion 38 adapted to receive the floor plate 39 which extends transversely across the vehicle. The member 33 is provided with a flange 40 which is riveted as at 42 to the upper horizontal flange 43 of the cross beam 10. The floor plates 39 are provided with depending flanges 44 locating them against shifting, these flanges being supported on suitable intermediate spacer members 45. A suitable sub-floor liner or similar plate 46 extends across the top of the channel 6 of the flanges 43 of the cross girders 10 to complete the structure and form a complete closure for the conduit 37. It will be apparent that with this construction, the outer wall 15 of

the car body extends or overhangs for an appreciable distance over the edge of the platform 5, whereas, the under-frame and side sill of the car body are disposed inwardly thereof so as to clear the edge of the platform 5, whereby the car although appreciably wider than the distance from the center of the rails to the platform, can move past the platform without obstruction. It will be apparent that the floor 39 is spaced several inches above the top of the platform 5, and will remain above the platform 5 even when the car is loaded.

Considering now in detail Figure 2, which is a sectional view through the same car body between two door posts, the member 12 is replaced at this point in the car body by the angle member 50, which is riveted to the channel 6 in substantially the same manner. The member 33 at this point has the reduced vertically extending portion 32' and the conduit construction is changed, there being provided a top member 52 riveted or otherwise secured at its flange portion 53 to the inner wall 19 of the body and closed by the member 29', forming a longitudinal continuation of the member 29. Of course, it is to be understood that at the door opening itself, the conduit 37 is interrupted to provide access to the interior of the vehicle.

The member 50 has riveted or bolted to the upper surface thereof the tread plate 55, which, at its outer end, is provided with a down-turned lip 56 extending over the platform 5. Extending through the tread plate 55 and through the reinforcing plate 57 is a post member 58 which is welded as at 59 to secure it in position, and which forms the lower journal for the door operating shaft 60, this door operating shaft being pivoted upon the post 58 at its lower end and carried in a suitable journal at its upper end. This shaft controls the operation of the door member 62, which has sliding movement between the inner wall 19 and the outer wall 15 of the car body to expose the door opening, which is defined at its lower edge by the tread plate 55. The outer wall 15 of the car body is re-inforced adjacent the door opening by the stiffening plate 63, since the member 12 is of course interrupted at the door opening. A suitable intermediate member 65 is disposed between the flange 50 and the member 33 to provide a continuous surface from the tread plate 56 over to the floor plate 39. Thus, when the car moves into position at the station platform and the door is opened, there is no lateral space between the station platform 5 and the tread plate of the door opening whereby the passengers can step directly into the car, and there is no possibility of wedging either the feet of the passengers between the car body and the platform or in providing a space therebetween through which articles, such as purses, packages and the like might be dropped.

It is therefore believed apparent that I have provided a car body and sill construction which will allow the use of a wider car than could normally be accommodated by a present station platform, and yet will allow the use of the conventional car at the same platforms.

I am aware that various changes may be made in certain details of the present construction, and I therefore do not intend to be limited except as defined by the scope and spirit of the appended claims.

I claim:

1. A rail car including a car body and a frame, said frame comprising a longitudinally extending side sill and transverse girders, a floor supported on said girders, outer and inner side walls in said car body supported in laterally outwardly overhanging relation on said sill, said side walls being interrupted to form a door opening, a door for closing said opening, a tread plate indirectly supported on said sill and extending laterally outwardly therefrom to the plane of the projection of said outer wall, and an intermediate floor plate supported on said sill and extending laterally inwardly from said tread plate to the lateral edge of said floor adjacent said door opening.

2. In a rail car body, a frame including a longitudinally extending sill beneath the car body, transverse girders secured to said sill, a floor supported on said girders, an upwardly and outwardly curved member secured to the outer face of said sill and having laterally spaced, vertical flange portions, both disposed outwardly of said sill, outer and inner side walls for one side of said car body supported at their lower ends on the respective flange portions, and bracing means disposed between the top face of said sill and said member and secured to the top of said sill and to the inner face of the flange supporting said inner wall.

3. A rail car including a longitudinally extending sill member, cross members secured to one face thereof, a floor supported on said cross members, inner and outer side walls for each side of said car, means supporting said walls on one side of said car from said sill with the inner wall disposed laterally outwardly of the outer face of said sill, said walls being interrupted to form a door opening, a tread plate in said opening and extending laterally outwardly therefrom to the plane of the projection of said outer wall, means supporting said tread plate on said sill, and means supported on said sill laterally inwardly of said last-named means forming a floor continuation between said floor and tread plate and overlying said sill.

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