

(No Model.)

A. G. LEONARD.  
CAR PLATFORM.

No. 543,031.

Patented July 23, 1895.

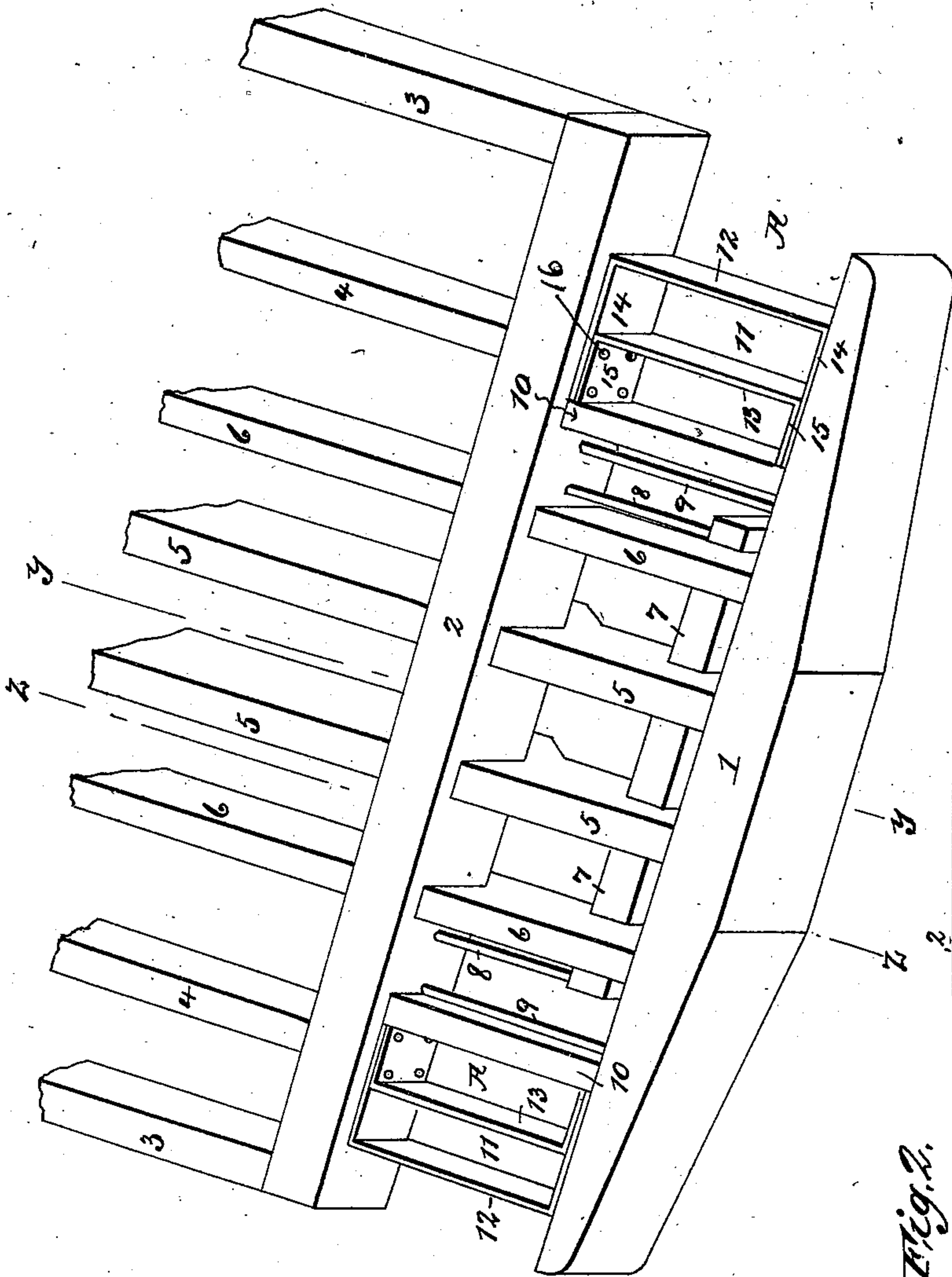


Fig. 1.

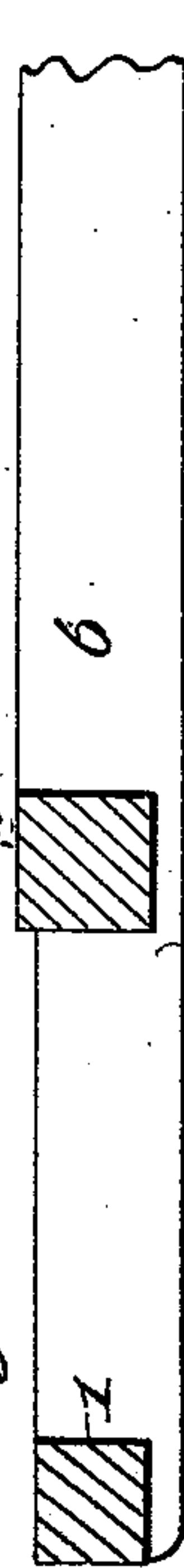


Fig. 2.

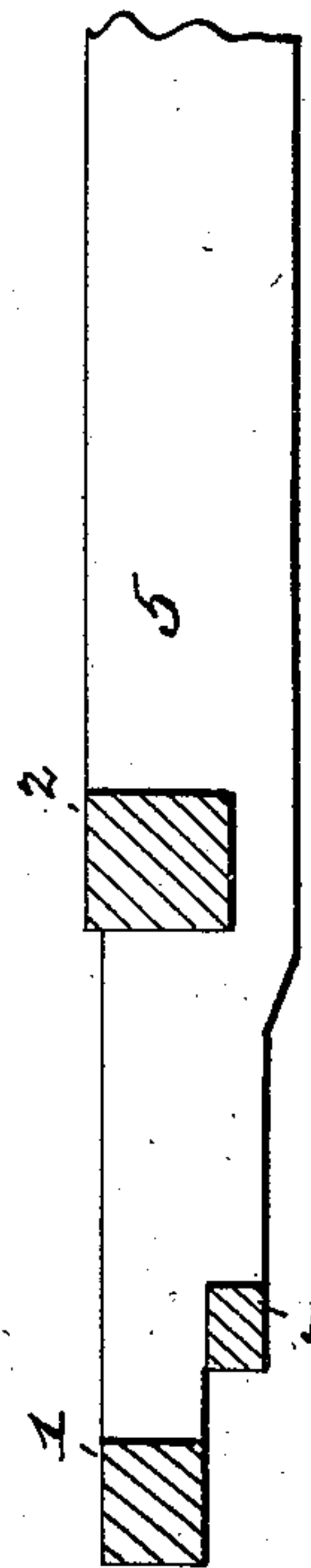


Fig. 3.

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# UNITED STATES PATENT OFFICE.

ARTHUR G. LEONARD, OF NEW YORK, N. Y.

## CAR-PLATFORM.

SPECIFICATION forming part of Letters Patent No. 543,031, dated July 23, 1895.

Application filed September 27, 1893. Serial No. 486,594. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR G. LEONARD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have made certain new and useful Improvements in Car-Platforms, of which the following is a specification.

My invention relates more especially to improvements in the platforms of steam or other fast railroad cars, although it is applicable to the platforms of other moving vehicles.

In constructing cars it is usual to place at the ends of the car the extreme cross or buffer beams, and at a certain distance to the rear of these are placed the "door-sills," so called from the car-door being located over them. The longitudinal sills of the car extend between the door-sills, and in some cases the central longitudinal sills extend between the buffer-beam and the door-sill. The sills lying between the door-sill and the buffer-beam form the supports for the platform, the depth of which is determined by the distance between the buffer-beam and door-sill.

The width of the platform has been heretofore defined by the distance between the step-sills, from the outer edge of which the platform-steps descend, the step-sills being located some distance from the end of the buffer-beam or the extreme outer longitudinal sill. This construction leaves the space between the buffer-beam and the door-sill, which is usually occupied by the steps, entirely without bracing to resist end impact; and my invention is directed to more thoroughly resisting such impact at this point, as well as adding additional resisting qualities to the whole car-frame.

My invention therefore resides in the structure and in the combination of parts herein-after set forth, and fully pointed out in the claims.

In the drawings, Figure 1 is a perspective elevation of one end of the car-framing, including a platform with my invention applied thereto; Fig. 2, a sectional elevation approximately on the line  $z z$ , Fig. 1; and Fig. 3, a like view on the line  $y y$ , Fig. 1.

Similar numerals of reference refer to like parts throughout the several views.

At 1 is shown the transverse buffer-beam of usual or preferred form and to the rear thereof

the door-sill 2. At 3 are the outer longitudinal sills, and 4 the second longitudinals. The sills 3 4 do not extend past the door-sill, but are abutted "end on" to the door-sill for the purpose of better resisting the blow or shock of impact.

The inner central longitudinals are shown at 5 and the outer at 6. Both of these sets of sills extend not only between the door-sills at each end of the car, but between the buffer-beams, and they are of such depth that the buffer-beam and door-sill can set therein so as to expose their entire side to a corresponding amount of surface to the longitudinals. (See Figs. 2 and 3.) In this manner the greatest amount of capacity for resisting collapse through an end-on impact is obtained, and this system of bracing is used at the present time on all steam-railroads in this country, I believe.

A supplemental sill or draft-beam 7 extends between the central longitudinals 5 6 and is abutted against them in the same way as shown in Fig. 3. This sill is used to sustain the front end of the draw-bar and may be further braced by the tie-rods 8, extending between it and the door-sill, and the buffer-beam and door-sill may, in like manner, be braced by the tie-rods 9 extending between those parts.

The foregoing describes a structure devised for the purpose of increasing, as a main feature, the strength of the car-frame in its resistance to collapse, and although I consider a structure wherein such ideas are incorporated as the best for co-operation with my invention I do not limit myself thereto.

The sills lying between the buffer-beam and the door-sill form the support for the platform-flooring, the width of which (where steps are used) has been defined by a short sill, which the edge of the flooring overhangs and from which the drop of step commences. This sill, which is called the "step-sill," is set back from the car side far enough to allow of the platform-step being located entirely within the carlings, which leaves a large unprotected or unbraced space between the ends of the bumper-beam and door-sill and the step-sill. By being thus unbraced the liability to demolition of the frame is increased, not so much from a directly end-to-end blow, (which would be pri-



marily received by the intermediate sills,) but by a blow being delivered at either side of the frame-center, in which case not only would the buffer-beam be subjected to fracture but one side of the entire framing would be more or less injured. If the buffer-beam were strong enough to resist the blow without fracture, the impact at an angle would loosen the timbers at the side opposite the point of contact and either weaken the frame or demolish it.

It is apparent from the foregoing that, as at present constructed, such platforms do not offer the greatest amount of resistance, and it is to increase this resistance that my invention is directed.

Referring now to Fig. 1, the step-sill is shown at 10 and lies substantially semidistant between the end of the door-sill and the car center. This sill abuts "end on" with both the buffer-beam and door-sill.

Within the space A, between the buffer-beam, door-sill, and step-sill, and preferably semidistant between the end of the buffer-beam and the step-sill, I have located an additional or auxiliary sill or brace 11, which may either be constructed of a wooden or metallic beam or the like, or preferably constructed to form a compound brace.

The brace 11, as illustrated herein, is composed of two plates of metal 12 13 having their ends bent at an angle, as at 14 15, so as not only to form a rigid brace but to readily enable its being securely fixed in position, the ends abutting end on with the door-sill and buffer-beam.

It will be noticed that the bent ends of the plate 12 are longer than those of the plate 13, and that the latter plate is shorter than the former, in order that it can lie within the bent ends 14.

Both plates being located a suitable distance apart, a column of considerable resisting capacity is constructed, which capacity is augmented by the disposition of the parts of the same, one in relation to the other. The bent ends being secured to the buffer beam and door-sill outside of the body of the brace and extending inwardly toward the car center adds an additional medium to resisting collapse from a blow given to the buffer-beam at an angle to the car center. The bent ends 14 15 are apertured to permit bolts 16, screws, or the like to be passed through and secured to the door-sill to hold the sill in place.

Besides strengthening the car-platform the auxiliary sill can be used for the purpose of

supporting an added section of the platform should it be desired to increase its width.

I am aware that it is not new with me to extend a beam between the buffer-beam and the door-sill at a point adjacent the outer sill of the end of the buffer-beam, as this is done in street-cars, where what is called "out-looks" are extended between the buffer-beam and the door-sill close to the outer edge of the car; but in this case the out-looks are bolted to the under side of the sills or beams and do not afford additional resisting power by reason of end-to-end abutment, as herein described; and it is for the purpose of more clearly bringing out this difference that I have shown it in the drawings and dilated upon it in the opening part of this description.

As my invention can be used in relations other than that disclosed I do not limit myself to the exact form, material, or location of parts before shown and set forth, for many changes and modifications can be made therein without departing from the spirit of my invention.

I claim—

1. In a car body and platform, the combination with the buffer beam 1, the door sill 2, the intermediate longitudinal sills extending between said beam and sill, the step-sill 10 located exteriorly of the intermediate sills, and an auxiliary sill composed of juxtaposed angle plates 12, 13, secured together and "end on" to said door sill and beam, and located between the ends of said door sill and beam, and the step sill 10, substantially as described.

2. In a car platform, the combination with the buffer beam and door sill, of the brace 11 comprising the plates 12, 13 having bent ends 14, 15, the plate 13 and its ends 15 lying within the bent ends 14 of the plate 12, said ends forming means for securing the plates to said beam and door sill, substantially as described.

3. In a car platform, the combination with the door sill and buffer beam, of the brace 11 comprising the plates 12, 13 having bent ends 14, 15, the plate 13 lying within the ends of the plate 12, both plates being disposed at a distance from each other greater than the thickness of the plate, substantially as described.

Signed at the city, county, and State of New York this 26th day of September, 1893.

ARTHUR G. LEONARD.

Witnesses:

W. B. AVERELL,  
HENRY B. WHIPPLE.