P. PARKE.

GRAIN TIGHT BOX CAR.

APPLICATION FILED DEC. 7, 1914.

1,153,249. Patented Sept. 14, 1915.

Fig. 1.

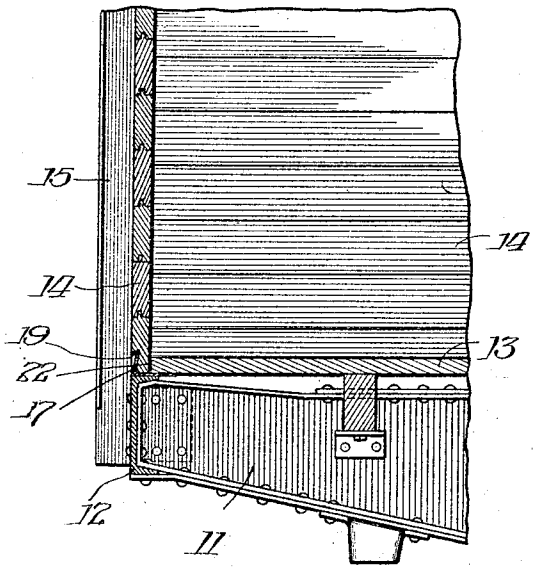
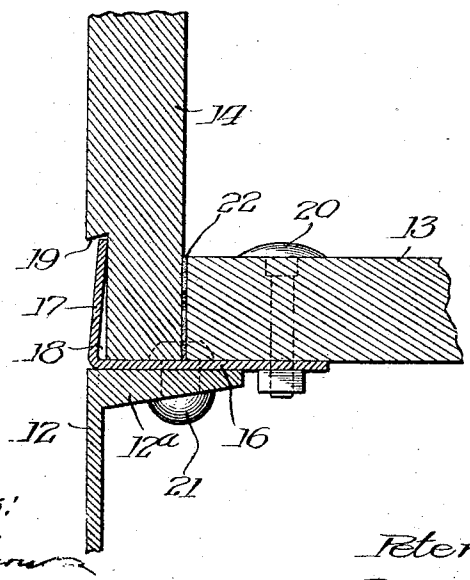



Fig. 2.




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# UNITED STATES PATENT OFFICE.

PETER PARKE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PULLMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## GRAIN-TIGHT BOX-CAR.

1,153,249. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed December 7, 1914. Serial No. 875,884.

*To all whom it may concern:*

Be it known that I, PETER PARKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Tight Box-Cars, of which the following is a specification.

Where, as is usual, ordinary box cars are used in carrying grain, leaks are liable to develop between the flooring and side sheathing due to the opening of the joint with the shrinkage of the lumber employed in the construction of the car and the spreading of the same under the weight and shifting of the lading and much difficulty has been experienced in the effort to obtain and maintain a grain-tight joint at the junction of the floor and siding.

It has been proposed to prevent the separation of the side sheathing and flooring by the employment of a side sill having an upwardly extending integral tenon or tenons, or a flanged plate superposed on the sill, the flanges or tenons in either case seated in the grooves in the lower surface of the flooring and outer edge of the sheathing whereby to hold them rigidly together. This construction is open to the objection, among others, that the tenons being unyielding the lower edge of the side sheathing boards is liable to split off when subjected to the wedging weight of the grain or to a blow from shifting lading. Where, to avoid this difficulty, the tenon engages along the exterior face of the sheathing instead of within a groove or recess, the elements enter behind the tenon and speedily rot the lower sheathing board.

By my construction I secure the desired result of a permanently grain-tight joint and at the same time avoid the difficulties referred to by providing a relatively thin metal plate overlying the sill and having a resilient upwardly extending inwardly inclined flange seated within a recess of the sheathing greater than the thickness of the metal whereby the upper wall of the recess is caused to overhang the upper end of the flange and prevent ingress of moisture while the flange has sufficient spring action to effect a resilient connection between the sheathing and flooring which will insure against a splitting of the board under sudden shock while maintaining a tight joint as the lumber shrinks. I also provide a secure anchorage of the floor by extending the plate inwardly beyond the inner edge of the side sill and bolting the floor boards to the plate, which is in turn bolted to the sill, thus enabling the floor to be adequately supported by means of channel sills having flanges of less width than would otherwise be necessary.

Other advantages of construction and operation from the standpoint of convenience, economy and efficiency will be apparent to those skilled in the art of car building from the subjoined detailed description based upon a preferred embodiment of the invention as set forth for purposes of illustration in the accompanying drawing, wherein—

Figure 1 is a fragmentary view of a car body in transverse vertical section; and Fig. 2 is a similar section on an enlarged scale.

In the drawings the numeral 11 designates one of the cross bearers of the car, 12 a side sill of channel cross section, 13 the flooring, 14 the side sheathing, and 15 the side supporting posts, all of the usual construction.

Superposed upon the upper flange $12^a$ of the side sill and extending longitudinally thereof from the door post to the corner of the car, or from corner to corner at the end of the car and beneath the line of junction between the flooring and side sheathing, is a relatively thin metal plate 16 having along its outer edge an upwardly extending inwardly inclined flange 17 which bears upon the outer face of the lower sheathing board 14 and preferably within a recess 18 of greater depth than the thickness of the metal whereby the upper wall 19 of the recess overhangs the upper edge of the flange to a material extent. The horizontal portion of this plate 16 has a width considerably greater than the flange $12^a$ of the sill and extends inwardly beyond the inner edge of the sill sufficiently to provide recesses for the reception of bolts 20 by

means of which the flooring boards 13 are firmly secured to the plate, the plate being in turn secured to the flange $12^a$ of the sill by means of bolts 21. The securing of the floor boards to the inner edge of the plate obviates the necessity of employing a sill with a horizontal flange sufficiently wide to enable the flooring to be secured directly to the sill, thus cheapening the construction without impairing its efficiency.

In practice the line of junction between the flooring and sheathing is sealed by means of gum-asphaltum or the like, as indicated at 22, and when assembled the flange 17 of the plate exerts spring pressure inwardly upon the side sheathing along the upper edge of said flange, the lower portion of the flange being out of contact with the board. Thus as the boards of the flooring and sheathing shrink the spring flange serves to maintain a close joint between the two while there is sufficient resiliency in the flange to take up the shock of shifting lading and prevent a splitting of the lower sheathing board at or above the flange as would result were the flange 17 absolutely rigid. The housing of the upper edge of the flange beneath the upper wall of the recess also serves to effectually preclude the entrance of rain or snow behind the flange and thus prevents the rotting of the board along its lower edge.

While the invention is illustrated as applied longitudinally of the car along the side sill, it is equally applicable and could be employed along the end sill of the car to effect a grain tight connection between the flooring boards and side sheathing at the ends of the car.

I claim:

1. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof, said plate having along its outer edge an up-turned resilient flange bearing upon the outer face of the sheathing to form a yielding lateral support therefor, and means to secure the plate to the flooring.

2. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof, said plate having along its outer edge an upturned inwardly inclined flange bearing marginally upon the outer face of the sheathing beneath an overhanging portion thereof, and means to secure the plate to the flooring.

3. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof, said plate having along its outer edge an upturned resilient inwardly inclined flange bearing upon the outer face of the sheathing, and means to secure the plate to the flooring.

4. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof, said plate having along its outer edge an upturned resilient inwardly inclined flange bearing upon the outer face of the sheathing, within a recess of the sheathing having an overhanging upper wall, and means to secure the plate to the flooring.

5. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof beneath the joint between the flooring and side sheathing, said plate secured to the sill and having along its outer edge an upturned integral flange bearing upon the outer face of the sheathing, said plate also extending inwardly beyond the inner edge of the sill, and means extending through the plate extension to secure the plate along its inner edge to the flooring independently of the sill.

6. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof beneath the joint between the flooring and side sheathing, said plate secured to the sill and having along its outer edge an upturned integral resilient flange bearing upon the outer face of the sheathing to form a yielding lateral support therefor, said plate also extending inwardly beyond the inner edge of the sill, and means to secure the plate along its inner edge to the flooring.

7. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof beneath the joint between the flooring and side sheathing, said plate secured to the sill and having along its outer edge an upturned integral resilient inwardly inclined flange bearing upon the outer face of the sheathing, said plate also extending inwardly beyond the inner edge of the sill, and means to secure the plate along its inner edge to the flooring.

8. In car construction, the combination of a sill, a metal plate superposed longitudinally thereof beneath the joint between the flooring and side sheathing, said plate secured to the sill and having along its outer edge an upturned integral resilient inwardly inclined flange bearing upon the outer face of the sheathing within a recess of the sheathing having an overhanging upper wall, said plate also extending inwardly beyond the inner edge of the sill, and means to secure the plate along its inner edge to the flooring.

9. In car construction, the combination of a side sill of channel cross section, a resilient metal plate superposed longitudinally thereof and beneath the joint between the flooring and side sheathing, said plate secured to the sill and having along its outer edge an upturned integral resilient inwardly inclined flange bearing upon the outer face

of the sheathing within a recess of the sheathing having an overhanging upper wall, said plate also extending inwardly beyond the inner edge of the upper sill flange, and means to secure the plate along its inner edge to the flooring.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PETER PARKE.

Witnesses:
J. E. CANDLIN,
G. C. PHILLIPS.