Oct. 24, 1939. H. C. PIERCE 2,177,076

LOADING CARS WITH BOXED PRODUCE

Filed June 28, 1939 2 Sheets-Sheet 1

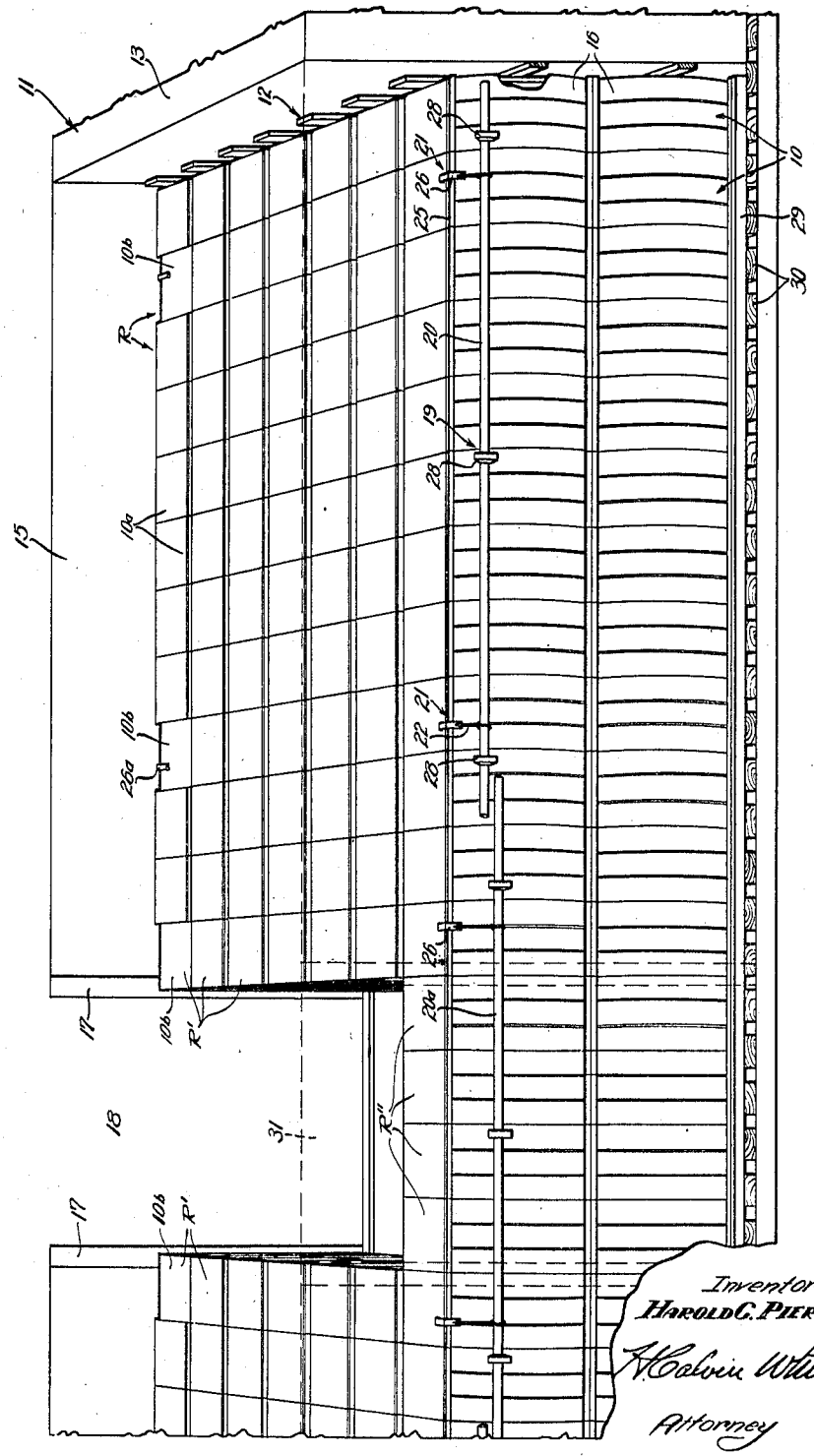


Fig. 1.

Inventor
HAROLD C. PIERCE
A. Calvin White
Attorney

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Filed June 28, 1939 2 Sheets-Sheet 2

Fig. 2.

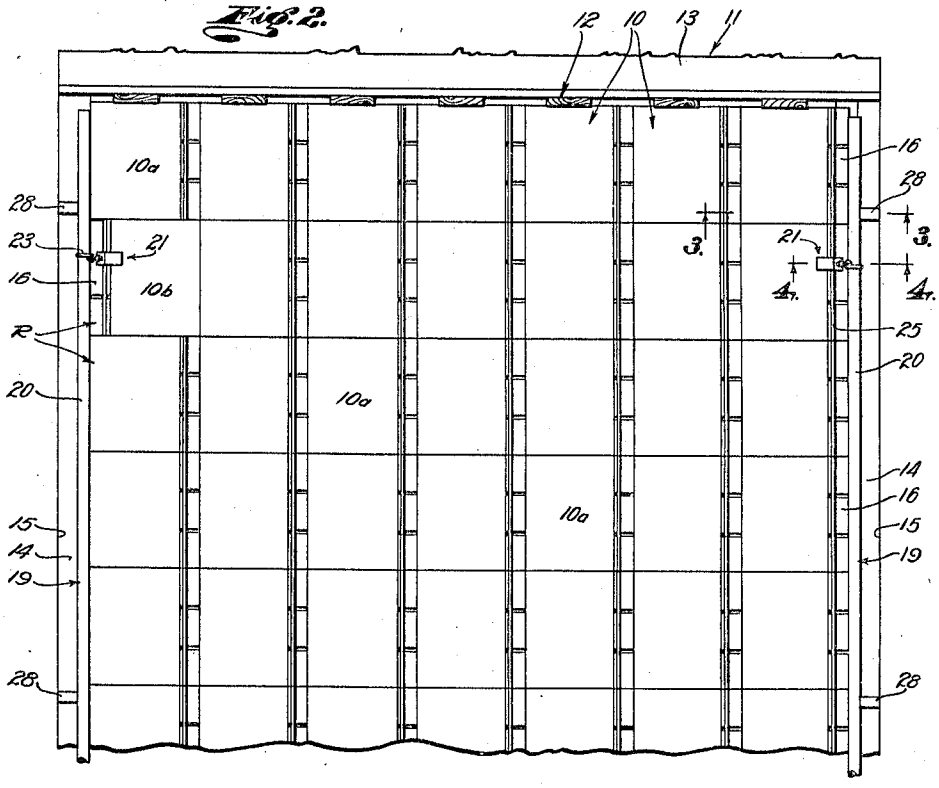


Fig. 3.

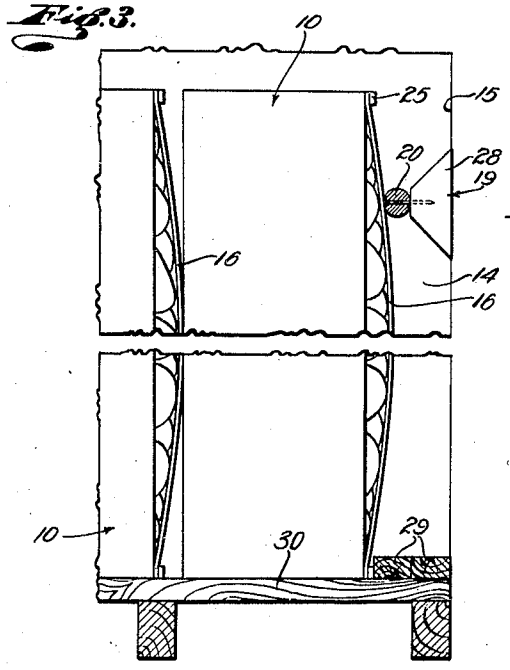


Fig. 4.

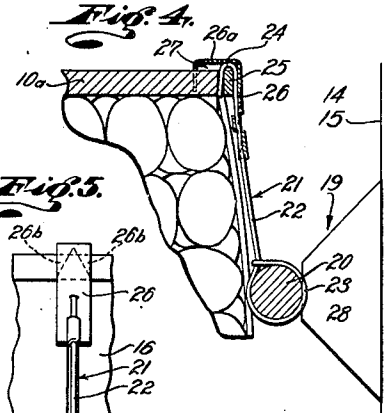
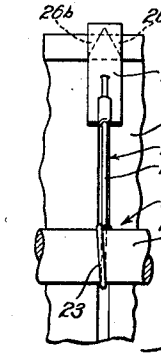


Fig. 5.



Inventor
HAROLD C. PIERCE

Attorney

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LOADING CARS WITH BOXED PRODUCE

Harold C. Pierce, Pomona, Calif.

Application June 28, 1939, Serial No. 281,582

9 Claims. (Cl. 105—367)

This invention relates generally to the loading of railroad cars with boxed produce such as citrus and deciduous fruits, and particularly to situations where the relative transverse dimensions of the car and load are such that in the absence of adequate support, the load is subject to lateral shifting in the car. My major object is to obviate the difficulties that in the past have been experienced in attempting to properly place and maintain the car load, and to provide an improved means of supporting the load in a manner that not only will greatly facilitate its placement in the car, but also maintain the load more securely in position and better protected during transit. It may be added that the superiority of the invention in these respects has been fully demonstrated in its adoption and general use in the industry.

The customary practice in loading railroad cars with boxed produce of the character mentioned, is to arrange the boxes on end in transverse rows within the car, usually two tiers deep, and to fill the car from its opposite ends toward the center. After the car has been filled to or somewhat beyond the side door openings, it is customary to insert between the sections of the load occupying opposite ends of the car, a suitable press, or as commonly termed, a box squeeze, which is operated to compact the boxes longitudinally of the car against the end bulkheads, and extend somewhat the space at the center of the load between the car door openings for filling in with additional rows of boxes.

In certain types of loads, for example lemon loads, the box dimensions are such that the transverse box rows do not completely fill the car from wall to wall, and due to the tendency of the load to shift laterally within the car during transit, it has been found necessary to hold the load in place and against lateral movement relative to the car. The general practice in the past has been to place the boxes against one side of the wall of the car, and with or without spaces being maintained between successive boxes in the transverse rows, to nail a spacer strip which extends substantially the full width of the car, to the top end of each box in a given row, the spacer strips thus being intended to hold the boxes against relative lateral movement and to space the load from one side of the car. Although this system of loading has long been in general use, it presents a number of inconveniences and disadvantages. In the first place, considerable material, time and labor are required in having to apply the spacer strips individually to each row of boxes. Moreover, it is found that the strips do not in all instances space and maintain the load in the desired condition for one reason, among others, that application of the squeeze and the resultant displacement of the boxes, causes the spacer strips to become detached and disarranged so that the load is permitted to shift when in motion. Another disadvantage is that this method of maintaining the load does not positively insure that the boxes will be held free from contact with the side walls of the car, or against lateral shifting and impacting of the load with consequent bruising of the produce. When the boxes are permitted to contact the car side walls, injury to the produce has been found to result, in warm weather, from overheating due to heat transmitted through the car wall, and in cold weather by freezing, the boxes in many instances having been found frozen to the wall.

In accordance with the invention, I provide an improved method of supporting and maintaining the load in proper condition within the car, whereby it is possible not only to simplify the loading operation, but also to positively insure the desired condition of having the load centered in the car and maintained in spaced relation to its side walls. Instead of applying individual transverse spacer strips to the several box rows, I employ a novel form of skeleton filler or spacer extending longitudinally within the car in engagement with the side walls and confining the load from the outside, rather than within. My improved skeleton spacer comprises, in its preferred form, an elongated member which for convenience may be termed the guard, extending in engagement and in overlapping relation with the end boxes of successive rows, and maintained in spaced relation to the car wall so as to provide an open spacer structure permitting free ventilation and circulation of air between the load and the walls of the car. The guard may conveniently be supported and spaced from the car wall by a series of spacing elements, such as wooden blocks, applied or attached to the guard at suitable longitudinally spaced points.

Although the guard element itself may be of any suitable form, I may use, as typical, an elongated bamboo pole such as I have described in connection with the type of box guard constituting the subject matter of Patent No. 2,156,866 issued May 2, 1939, to me on Doorway guards and side slack bracing for crate loaded cars. The patent referred to discloses a type of load in which the boxes are spaced apart at the center of the car and the bowed faces of the end

boxes in the rows are permitted to engage the side walls of the car, the purpose of the guards in that situation being primarily to prevent outward displacement of the load through the car door openings and to tie together the side boxes of the load. In the present instance my primary purpose is to hold the load away from the car walls, and to insure a predetermined spacing which will center the load transversely of the car and provide for free air circulation between the load and the car.

The present skeleton form spacer has certain additional advantages and novel characteristics to which preliminary reference may be made. Being supported from the car wall only at longitudinally spaced intervals, the guard in resisting any tendency of the load to shift, has certain yielding characteristics giving the load cushioned support, i. e., when subjected to pressure applied by the load, the sections of the guard between points of support are capable of limited flexing. As will later appear, the present spacer is capable of simple and easy installation in any given section of the car and also in progressively following the load as it is filled in toward the center of the car, and finally across the door openings, so as to provide in effect, when the car is loaded, a continuous spacing means extending the full length of the car.

All of the features and objects of the invention referred to in the foregoing, as well as additional characteristics and details of a typical and illustrative embodiment thereof, will be understood more fully from the description to follow. Throughout the description reference is had to the accompanying drawings in which:

Fig. 1 is a diagrammatic perspective showing a portion of a railroad car loaded with crown packed boxes in accordance with the invention, the forward wall and door of the car being shown in dashed lines;

Fig. 2 is a fragmentary plan at one end of the car;

Figs. 3 and 4 are enlarged fragmentary sections on lines 3—3 and 4—4 respectively of Fig. 2; and

Fig. 5 is a side elevation of the guard fastener as viewed from the right in Fig. 4.

In Figs. 1 and 2 of the drawings, the produce boxes 10 are shown to be loaded on end within the car 11 and to be arranged in transversely extending rows R, two tiers deep, each end row being placed against the bulkheads 12 supported from the ends 13 of the car. Each row of boxes is centered transversely of the car with successive boxes in engagement, leaving open spaces 14 between the load and the car side walls 15. In its general placement within the car, the load thus differs from the customary practice in the past of maintaining at least one side of the load in engagement with the corresponding side wall of the car, and as in the case where transverse spacer strips are used, spacing the successive boxes in the rows. In the present instance, the boxes preferably are arranged with their bowed lids 16 facing the same direction, except for an occasional reversal of a box positioned at one side of the load to accommodate the spacer attachment, as will presently appear. The car is loaded from opposite ends toward its center, and in the usual loading operation, the box rows R are filled to the side frames 17 of the car door openings 18. Then the box squeeze is placed in the car within the passage between the door openings, applied to the inner box rows R', and the load compacted longitudinally of the car against the bulkheads 12. A longitudinal row R'' of boxes having their bowed lids facing outward, is filled in at one side of the car, and the space between the end rows R' then filled with boxes to the opposite side of the car.

The skeleton form of spacer assemblies provided by the invention are adapted to be placed at the outside of the load so as to be contained within the spaces 14 between the load and side walls 15 of the car. The spacers thus laterally confine and hold the load centered within the car, and also insure the maintenance of open air spaces 14 along opposite sides of the load and throughout the full length of the car. Each spacer assembly, generally indicated at 19, comprises an elongated guard 20 within the space 14 opposite the top tier of boxes below their upper ends, the guard directly engaging and extending in overlapping relation with the end boxes of the series of the rows. Each guard 20 is suspended from the boxes at longitudinally spaced points, two suspensions ordinarily being sufficient for each guard, by attachments of the form shown more clearly in the enlarged views of Figs. 4 and 5. Each attachment 21 comprises a wire 22 looped at 23 about the guard and having at its upper end a hook 24 placed about the end cleat 25 of the box between the lid slats. For the purpose of preventing the hook 24 from becoming disengaged from the cleat, I apply to the wire 22 a metallic retainer strap 26 through which the wire extends as illustrated, the top 26a of the strap overlying the hook 24 and having a pair of depending pointed prongs 26b which are driven into the top end 10a of the box. Although the retainer straps are driven into the box, they may easily be released to permit removal of the hooks, by prying the straps loose with a claw inserted within the space 27. The guards 20 are laterally supported at longitudinally spaced points from the side walls of the car and held in spaced relation thereto, by suitable spacer elements which conveniently may take the form of wooden blocks 28 to which the guards are nailed or otherwise suitably secured. The bases of blocks 28 bear flatly against the car wall and have sufficient vertical length to prevent the spacer assembly from becoming displaced into "cocked" position as a result of side thrust exerted by the load.

In the loading operation, the first box rows are placed against the bulkheads 12 as described, and the succeeding rows filled in place. Either before starting to load the boxes, or during the loading, spacer strips 29, see Fig. 3, may be placed on or secured to the car floor 30 against the sides of the car, to hold the bottom tier of boxes in the same centered position as the upper tier. The spacer assemblies 19 may be put in place at opposite sides of the load either after a corresponding length of box rows is placed in the car, or during the filling in of the successive rows. In the first mentioned instance, the spacer assembly is inserted from above, the guard 20 and spacer blocks 28 being wedged down between the boxes and car wall, and the hooks 24 and retaining straps 26 then secured in place. Where the spacer assembly is applied as the box rows are being filled in, an attachment 21, for example the one toward the end of the car, is secured to the box, and the forward portion of the guard permitted to incline toward the floor until the box rows have become advanced to the point of giving support for the next attachment.

As shown in Fig. 1, the guards 20 of successive spacer assemblies are placed in overlapping rela-

tion, with the central guard 20a spanning the door opening 18 at its side of the car, thus giving in effect continuous lateral support for the load, and continuous spacing from the far wall (including the door) throughout the length of the car. As will be understood, the central guard 20a may be put in place before or after the box squeezing operation, and before or after placement of the side box row R''. The forward car door 31, illustrated by dashed lines, ordinarily will be closed before placement of the guard.

Where the spacer assembly is suspended from the boxes by attachment to the end cleats of their bowed lids, as in the typical form described, the end boxes adjacent the far wall of the car as viewed in Fig. 1, and in the rows to which the guard is hooked, are turned to accommodate the guard attachment. Thus, the boxes 10b are shown to have their bowed lids facing the car wall to permit placement of the hooks 24 over the end cleats 25 of the boxes. As will be understood, the intermediate spacer assembly at the far side of the load, see Fig. 1, is left off until the center space of the car is filled with boxes, after which the guard is inserted and fixed in place, and the rear door closed.

The use of a skeleton spacer structure in which the guard element engaging the boxes runs longitudinally of the car and is supported from the car wall only at spaced intervals, has a number of important advantages over any type of spacer heretofore used. Also, this spacer possesses distinct advantages over a solid or non-skeleton form, such as for example one completely filling in between the boxes and the car wall and continuously engaging the spaced surfaces. In the first place, the present spacer when inserted along opposite sides of the load, not only holds the boxes away from the car walls, but it permits open ventilation spaces to be maintained all along the load throughout its full length. The comparatively small size guards 20 and spacer blocks 28 do not interfere with free air circulation within the spaces 14. In addition, the lengths of the guards 20 between their points of support against the spacer blocks 28 are of sufficient extent to permit flexing of the guard spans between supports under transverse load pressure, as when the load tends to shift in the car. Consequently, the load is desirably cushioned by the guards against side sway.

Finally, the spacers in addtion to being conveniently light-weight and easily installed, have a novel and important characteristic with respect to variation in their spacing width, to accommodate varying distances between the load and car wall. Lack of uniformity in the transverse dimensions of the box rows and car wall spacing, may require variation of spacer width along the car. This is permitted by the present type of spacer in that the width of the spacer blocks 28 may be increased or decreased, as the case may require, and progressively so as the load is being filled into the car. Also it will be noted that the capacity of the guard for flexing between supports, permits the spacers to accommodate box rows of slightly greater than normal length, and also irregularities on the box surfaces, without having to make adjustments in the spacer dimensions. And the fact that the guards are entirely spaced from the car walls except at the points of support, eliminates any necessity for removing irregularities on the inner surfaces of the walls except at the spacer blocks, since such irregularities are bridged across by the guard.

I claim:

1. In a railroad car containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car extending longitudinally along its side wall above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework including an elongated horizontally extending member overlapping and engaging the end boxes in said rows, and blocks attached to said member at longitudinally spaced points and supporting the member from the car wall to leave an air space between said member and wall.

2. In a railroad car containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car extending longitudinally along its side wall above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework including an elongated horizontally extending member overlapping and engaging the end boxes in said rows, and means supporting said member from the car wall at longitudinally spaced points to leave an air space between said member and wall, said member being capable of flexing between said supporting means to cushion the box load against side sway within the car.

3. In a railroad car containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car extending longitudinally along its side wall above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework supported by and maintaining end boxes of said rows in spaced relation to the wall of the car and permitting free air circulation between said end boxes and the car wall.

4. In a railroad car containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car extending longitudinally along its side wall above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework including an elongated horizontally extending member overlapping and engaging the end boxes in said rows, means suspending said member from said end boxes, and means supporting said member from the car wall only at longitudinally spaced points to leave an air space between said member and wall.

5. In a railroad car containing boxes of produce arranged on end in upper and lower tiers and in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car extending longitudinally along its side wall opposite boxes in said upper tier and above the boxes in said lower tier, said spacing means comprising an open framework maintaining end boxes of said rows of the upper tier in spaced relation to the wall of the car and permitting free air circulation between the boxes and the car wall, and spacing means applied to the car floor for maintaining end boxes in the rows of said lower tier in spaced relation to said wall of the car, both said spacing means together serving to maintain substantially the same spacing of the upper and lower box tiers from the walls of the car and to center the box load in the car.

6. In a railroad car having inside plane surface side walls and containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car applied to and extending longitudinally along the plane surface of its side wall above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework restraining said rows against lateral shifting in the car and maintaining end boxes of said rows in spaced relation to the wall of the car, and said means permitting free air circulation vertically between said end boxes and the car wall.

7. In a railroad car having inside plane surface side walls and containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means comprising an open framework within the car applied to and extending longitudinally along the plane surface of its opposite side walls above the floor of the car and below the top ends of said boxes, said spacing means centering and restraining said rows against lateral shifting in the car and maintaining the boxes at opposite ends of said rows in spaced relation to the wall of the car, and said means permitting free air circulation vertically between said end boxes and the car wall.

8. In a railroad car having inside plane surface side walls and containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means within the car applied to and extending longitudinally along the plane surface of its side wall above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework restraining said rows against lateral shifting in the car and maintaining end boxes of said rows in spaced relation to the wall of the car, and said spacing means having yielding characteristics and cushioning the box load against side sway within the car.

9. In a railroad car having inside plane surface side walls and containing boxes of produce arranged on end in successive transverse rows extending from the end of the car toward its center, skeleton spacing means adapted to be applied to the plane surface of the side wall of the car at longitudinally spaced and variable intervals and positioned above the floor of the car and below the top ends of said boxes, said spacing means comprising an open framework restraining said rows against lateral shifting in the car and maintaining end boxes of said rows in spaced relation to the wall of the car, and said means permitting free air circulation vertically between said end boxes and the car wall.

HAROLD C. PIERCE.