Feb. 4, 1947. H. C. PIERCE 2,415,368

BOXED PRODUCE LOAD

Filed Dec. 13, 1943

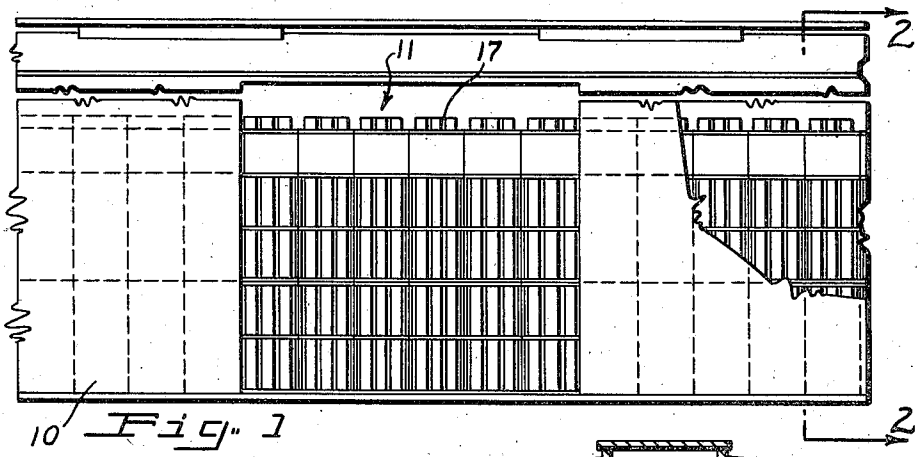


Fig. 1

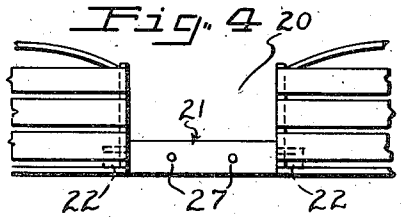


Fig. 4

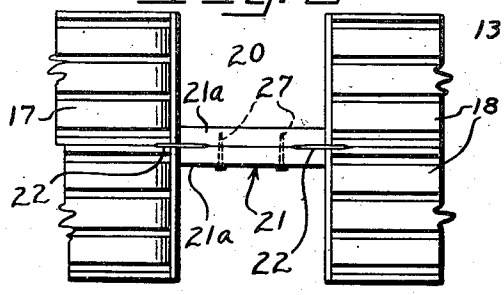


Fig. 5

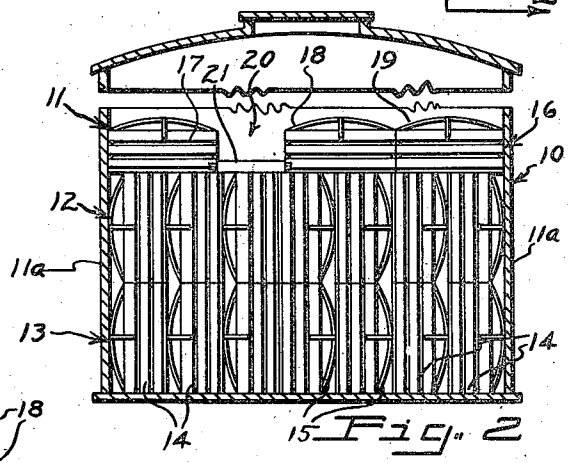


Fig. 2

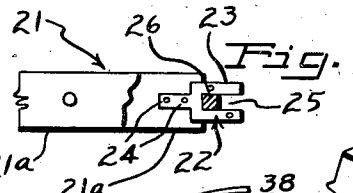


Fig. 6

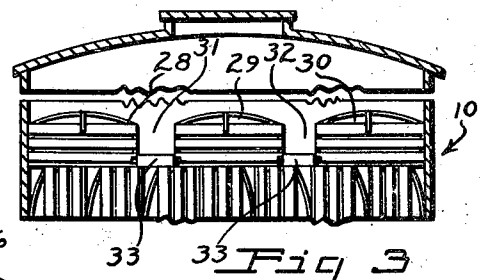


Fig 3

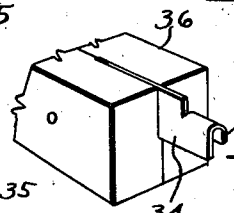


Fig. 7

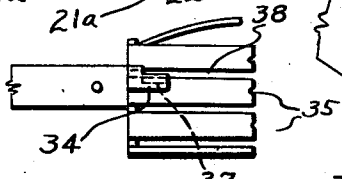


Fig. 8

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BOXED PRODUCE LOAD

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5 Claims. (Cl. 105—367)

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This invention has to do generally with the stabilization of boxed produce loads, and has for its primary object to provide improved and simplified supporting means for maintaining certain boxes or rows thereof in the load assembly, in spaced relation and held against horizontal or transverse shifting within the car.

As illustrative of a preferred, though typical, adaptation and use, the invention will be described with reference to a form of box load which may preliminarily be described briefly. The box car load may comprise one or two lower tiers of crown-packed boxes of produce, such as oranges or lemons, in which the boxes stand on end. In an upper or top tier, the boxes are placed on their bottoms, i. e. with the crown pack up, and are arranged in rows extending longitudinally of the car, with the long dimensions of the boxes extending transversely of the car. It happens that the distance between the side walls of the standard box cars does not correspond to any multiple or combination of the box dimensions, and consequently at least two of the longitudinally extending box rows are spaced apart, permitting the outside box surfaces to engage the side walls of the car.

The invention is directed to improved supporting means adapted to be inserted between the spaced rows to maintain, in conjunction with the car side walls, all the rows in this same tier against transverse shifting in the car, and thereby prevent damage to the boxes or their contents that might otherwise occur during transit as a result of such shifting. A particular object is to provide a form of box spacer and support which not only engages the spaced opposed faces of the boxes, but also is received between the supported boxes, or some of them, to maintain the support against shifting relative to the boxes.

In its preferred form the present support is characterized by its extreme simplicity, economy in manufacture, and ease of use and installation in the load. As will appear, each support unit may be made simply as a block member adapted to overlap adjacent corners of two spaced pairs of boxes, and elongated in accordance with the proper spacing to be maintained between the rows, said member having end projections adapted to be received between the engaged boxes.

Fig. 1 is a fragmentary side elevation of an open door box car containing the produce load;

Fig. 2 is a cross-section on line 2—2 of Fig. 1;

Fig. 3 is a view similar to the upper portion of Fig. 2, illustrating a variational form of load;

Fig. 4 is a fragmentary view showing the supporting member projections received between spaced opposing pairs of boxes;

Fig. 5 is a plan view of Fig. 4;

Fig. 6 is a fragmentary view of the end portion of the supporting member;

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Fig. 7 shows in perspective a variational form of supporting member; and

Fig. 8 shows the supporting member of Fig. 7 applied to the slatted side of a box.

Referring first to Figs. 1 and 2, the usual and conventionally illustrated refrigerated box car 10 is shown to contain a load 11 of boxed citrus produce, for example, in which the boxes are arranged on end in two lower tiers 12 and 13 with the boxes in each tier placed in parallel rows extending the length of the car, and in parallel transverse rows between the car walls 11*a*. The boxes 14 may be of the usual crown-packed form, and while their relative arrangement in the lower tiers 12 and 13 is immaterial so far as the present invention is concerned, some of the boxes at the right, as viewed in Fig. 3, are shown to have their bowed crowns 15 toward the right-hand side of the car and to engage the bottoms of adjacent boxes, the boxes at the left being similarly arranged with relation to the left-hand side wall of the car. The box dimensions may be such that successive boxes will be in interengagement and the outside boxes engage the car walls 11*a*, the tiers 12 and 13 thus being stabilized against lateral shifting in the car. Where the box dimensions and the car width do not have such correspondence, these lower tiers may be blocked or otherwise supported by commonly used expedients, to prevent their shifting in the car.

The tier 12 supports a third tier 16 of boxes 17, 18 and 19 arranged with their long dimensions, i. e. lengths, transversely of the car, and preferably with their crowns up as illustrated. Correspondingly positioned boxes 17, 18 and 19 extend in rows running the length of the car, as will be apparent from Fig. 1. It happens that the distance between the car sides 11*a* does not correspond to any aliquot multiple of the long dimension of the boxes, and consequently when arranged as in Figs. 2 and 3, certain of the boxes in the upper tier 11 are spaced apart. In the form of load shown in Fig. 2, the outer boxes 17 and 19 are placed against the sides of the car and boxes 18 and 19 are arranged in end-to-end engagement, leaving at 20 a space between the adjacent ends of boxes 17 and 18. The invention aims to provide a simple and practicably usable supporting means for maintaining the boxes in such spaced relation, and therefore against lateral shifting in the car.

In its preferred form, such means comprises a support 21 comprising a pair of wooden blocks 21*a*, e. g. equal length two-by-fours. Each support 21 carries a pair of end projections 22 which may be of any desired shape, typically in the form of a thin metallic plate 23, the inner end of which is nailed at 24 to the inner face of one of the blocks 21*a*. The plate 23 may be notched at 25 to provide a feature of adjustment or compensa-

tion where the length of the blocks 21*a* may be less than the spacing at 20 between the boxes. Whereas normally the ends of the boxes will be engaged by the ends of blocks 21*a*, when the last mentioned condition does not exist because of greater spacing between the boxes, the box ends may be engaged by an overlapping spacer element or block 26 inserted within notch 25. Blocks 21*a* may be held together by any suitable means, such as nails 27. The projections 22 preferably are sufficiently thin as to enable at least the intermediate portions of the box sides between which the projections are inserted, to be substantially in engagement by virtue of normal side bulge, or due to pressure applied longitudinally of the car to the box rows.

As best illustrated in Fig. 5, the boxes 17 and 18 may be regarded as arranged in spaced pairs, in which positions they are maintained by dropping the supporting member between the box pairs with the projections 22 received between the sides of adjacent boxes. In this manner the ends of the blocks 21*a* are brought into engagement and overlapping relation with the ends of the boxes to hold them in spaced relation. The projections 22 of course maintain the supporting member in this position and against shifting transversely within the space 20. As illustrated, supporting members 21 rest on the top of the box tier 12 below, and by reason of the weight of the blocks 21*a*, the supports effectively remain in this position. It is only necessary to use one supporting member 21 between successive individual pairs of boxes, although if desired, the supports may be used between each corner portion of successive boxes, i. e. with the projections 22 received between each of the successive boxes 17 and 18.

The top tier box arrangement of Fig. 3 may be used where it is desired to accurately center the load transversely of the car. Here the boxes 28, 29 and 30 are spaced equal distances apart at 31 and 32, and are maintained in such spaced relationship by supporting members 33 of shorter length than the members 21, but otherwise of the same form and arrangement between the boxes.

In the variational form of the invention shown in Figs. 7 and 8, the supporting member end projections 34 are shaped to engage the side slats 35 of the boxes to maintain the blocks 36 of the support in elevated position, as in Fig. 3. For this purpose the support 34 may have a downwardly turned flange 37 to be received within the space 38 between the box slats and to rest upon the upper edge of the slat which the flange overlies. When positioned between adjacent boxes, the projection 34 is effectively confined against accidental displacement therefrom, by the close proximity of the box sides preventing movement of the flange 37 out of the space 38.

I claim:

1. For use in stabilizing boxed produce loads, an elongated brace adapted to be placed horizontally between and in end engagement with oppositely positioned spaced pairs of boxes, said brace overlapping adjacent corner portions of the boxes of each pair to assume horizontally applied forces and to maintain said pairs in minimum spaced relationship in accordance with the length of the brace, and projections carried by and extending beyond the ends of said brace and receivable between interengaging vertically extending sides of the boxes of each of said pairs at said corners to prevent lateral shifting of the brace relative to the boxes.

2. For use in stabilizing boxed produce loads, a brace adapted to be placed horizontally between and in end engagement with oppositely positioned spaced pairs of boxes, said brace overlapping adjacent corner portions of the boxes of each pair to assume horizontally applied forces and to maintain said pairs in minimum spaced relationship in accordance with the length of the brace, and metallic projections carried by and extending beyond the ends of said brace at substantially their centers and adapted to be received between the vertically extending sides of the boxes of each of said pairs at said corners to prevent lateral shifting of the brace relative to the boxes, said projections being sufficiently thin to permit interengagement of the boxes of each of said pairs.

3. For use in stabilizing boxed produce loads, a brace comprising a pair of elongated wooden blocks of corresponding length nailed together and adapted to be placed horizontally between and in end engagement with oppositely positioned spaced pairs of boxes, said brace overlapping adjacent corner portions of each pair to assume horizontally applied forces and to maintain said pairs in minimum spaced relationship in accordance with the length of said blocks, and relatively thin and flat metallic projections extending from between said blocks beyond the ends thereof and adapted to be received between vertically extending interengaging sides of the boxes of each of said pairs thereof to prevent lateral shifting of the brace relative to the boxes.

4. For use in stabilizing boxed produce loads, a spacer unit comprising a member adapted to be placed between and in engagement with the ends of oppositely positioned spaced pairs of boxes and at each side of the interengaging sides of the boxes in each pair, and a rigid projection carried by and extending beyond said member and receivable between the interengaging vertically extending sides of the boxes of one of said spaced pairs of boxes to prevent horizontal shifting of the spacer unit relative to the boxes.

5. For use in stabilizing boxed produce loads, a spacer member adapted to be maintained between and in engagement with the ends of oppositely positioned spaced pairs of boxes and at each side of the interengaging sides of the boxes in each pair, and holding means for said member including a pair of rigid projections carried by and extending from said member between said interengaging sides of both of the box pairs, and means extending laterally from each of said projections through the outer surface planes of one of the inter-engaging box sides in each of said pairs of boxes to hold the spacer member against upward displacement.

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