

March 19, 1940.

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2,194,008

PACKAGE OR CRATE

Filed March 4, 1936

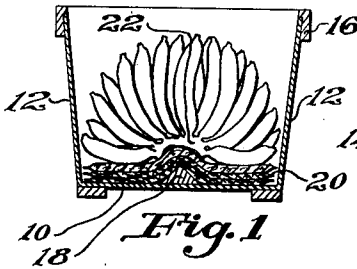


Fig. 1

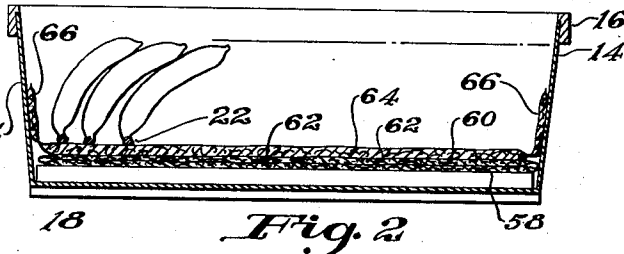


Fig. 2

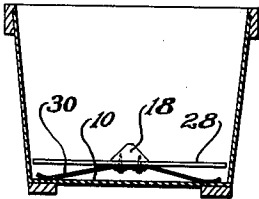


Fig. 3

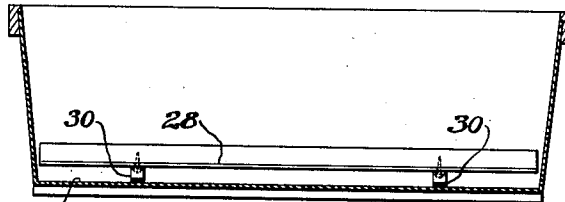


Fig. 4

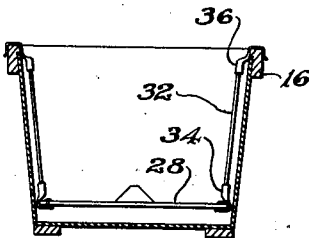


Fig. 5

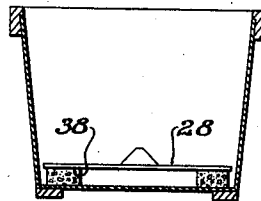


Fig. 6

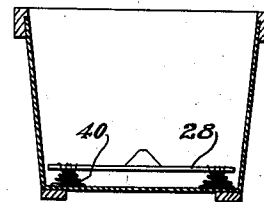


Fig. 7

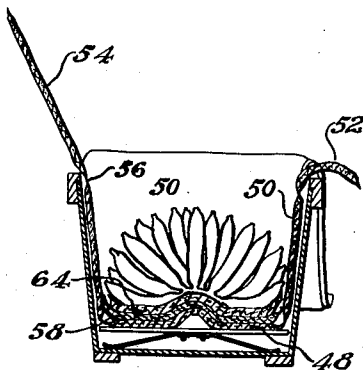


Fig. 8

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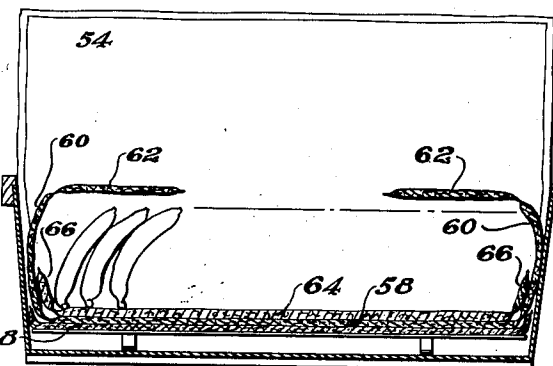


Fig. 9

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UNITED STATES PATENT OFFICE

2,194,008

PACKAGE OR CRATE

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Application March 4, 1936, Serial No. 66,998

2 Claims. (Cl. 99—171)

The present invention relates to packages or crates, more particularly for the handling of perishable foodstuffs such as bananas and other fruits.

5 The principal object of the present invention is to provide a package or crate having provision for protecting the contents against bruising in transit and also against the effects of low temperatures. To this end, the present invention comprises the package or crate hereinafter described and particularly defined in the claims.

10 In the accompanying drawing, Fig. 1 is a transverse sectional view of one form of crate according to the present invention; Fig. 2 is a longitudinal section of the crate shown in Fig. 1; Figs. 3 and 4 are transverse and longitudinal sectional views, respectively, of a modified form of crate; Figs. 5, 6 and 7 are transverse sectional views of other modified forms; Fig. 8 is a transverse section of a crate adapted particularly for shipment of perishable goods in cold weather; and Fig. 9 is a longitudinal section of the crate shown in Fig. 8.

15 The invention is herein illustrated and described as embodied in a crate for shipment of bananas although it may be used for other fruits or perishable goods. Bananas are particularly susceptible to injury because of their shape and the difficulty of packing them in crates of ordinary form. Bananas are usually shipped in "hands" each comprising a number of bananas attached at their ends to a hard fibrous "heel" of general arcuate shape. The usual method of packing is to lay the hands in a crate with the heels down. The support of the entire hand comes on the outside bananas which are likely to be bruised under the usual shocks of transit. Furthermore, bananas present a particular problem because of their susceptibility to low temperatures, since they are injured at temperatures below 40°. The present invention avoids the difficulties usually encountered in the handling of bananas and hence may be adapted without difficulty to the shipment of other and less sensitive foodstuffs.

20 In the accompanying drawing, Figs. 1 and 2 illustrate a type of package suitable for ordinary weather conditions. The crate is of the usual external form having a bottom 10, sloping sides 12 and sloping ends 14, and provided with the usual top rails 16. The crates are arranged to permit nesting when empty for easy shipment.

25 Attached to the bottom and extending the full length thereof along the middle is a saddle 18 which, as shown, is of general triangular shape

and preferably made of wood, for reasons of cheapness. The bottom 10 and the saddle 18 are covered by one or more pads indicated generally at 20 and of a type to be later described in detail. The pads are of considerable thickness and are such as to provide a moderately resilient support for the bananas. The hands of bananas are placed in the crate, with the heel portions 22 conforming generally to the ridge formed by the saddle. It will be noted in Fig. 1 that the saddle 18 affords a substantial support for the arcuate heel to relieve the end bananas of the hands from the necessity of supporting the complete load, and also positions the hands centrally of the crate to prevent shifting of the bananas toward either side wall.

30 Under severe conditions of shipment, or when the bananas are especially tender, additional means for relieving the shocks of transit are desirable. To this end, the crate shown in Figs. 3 and 4 may be employed. This crate is similar to that shown in Figs. 1 and 2, except that a false bottom 28 is provided and the saddle 18 is attached thereto. The false bottom 28 is resiliently supported on leaf springs 30 which are attached thereto under the saddle 18. As shown in Fig. 3, the springs are flared at their outer ends to rest on the bottom 10. Two or more pairs of such springs may be provided, as shown in Fig. 4. In packaging the fruit, the pads are simply laid over the false bottom 28 and the saddle 18 and the hands are laid in place, as shown in Figs. 1 and 2. The springs 30 may be sufficiently strong to support the usual amount of fruit packed in a crate and yet resilient enough to yield considerably under the shocks of transit. It will be seen that not only is the hand of bananas supported on the strong heel in the same manner as shown in Fig. 1, but the entire contents of the crate are resiliently held to relieve any sudden jars or shocks which might result in bruising or breakage of the bananas. The springs 30 are preferably not attached to the main bottom 10 so that the whole false bottom assembly can be removed to permit easy stacking or nesting of the crates for empty shipment.

35 The crate shown in Figs. 3 and 4 is a specific form of a general construction involving a resilient support for the false bottom. Other types of supports are shown in Figs. 5, 6 and 7. In Fig. 5, the false bottom 28 is supported by a series of rubber bands 32 each attached to the false bottom by a hook 34 and attached at its upper end to a hook 36 which overlies the rail 16. This

form of the invention is advantageous from the standpoint of shipment of empty crates, since the hooks 36 may be released and the false bottom lowered to the floor, thereby permitting the crates to be stacked empty without removal of the false bottom.

In Fig. 6, the false bottom 23 has cemented to it a number of blocks or pads of sponge rubber 38 which rest on the main bottom 10. In Fig. 7, the false bottom 28 has secured to it a plurality of conical coil springs 40, the bases of which rest on the main bottom 10. In any of the forms of the invention, the same resilient support for the fruit is provided.

The crate is provided with a plurality of pads, each of which comprises outer sheets of paper filled with any suitable fibrous material, preferably that described in the Gerard and Weisman Patent No. 1,837,261 and consisting of partially and completely disintegrated paper particles. The pads are completely sealed around the edges to enclose the paper particles. The pads are of such a shape as either to permit use for complete enclosure of the fruit in cold weather or in the manner shown in Fig. 2 for less severe weather conditions. To this end, three different sizes of pads are employed, all of which are used for the cold weather pack. All three are shown in Figs. 8 and 9.

The bottom pad of Figs. 8 and 9 is of large size and comprises portions to cover the bottom, the side walls and the top of the crate. The pad has a bottom portion 48, two side portions 50, a narrow top portion 52 and a wide top portion 54. Between the various portions, the pad is provided with breaks 56 to determine folding lines. These breaks are places in which the fibrous material is absent or is of diminished thickness, the enclosing fabric sheets being there cemented together. Besides determining folding lines, the breaks are useful in dividing the large pad into small areas to prevent settling or shifting of the enclosed material.

The second pad, which is to cover the bottom, the end walls and the top, is relatively long and narrow, having a bottom portion 58, end portions 60 and top portions 62. The third pad, of considerably smaller size, has a bottom portion 64 and short end portions 66. The three pads are laid in the crate with the bottom portions covering the bottom of the crate as well as the saddle and with the respective side and end portions against the sides and ends of the crate. The bananas are then placed in the crate, as shown in Fig. 8. The end sections 62 of the second pad are folded in, as indicated in Fig. 9, then the short top section of the large pad is laid over the top, after which the large top section 54 is pulled

over and tucked in at the side. This arrangement gives three thicknesses of pad at the bottom to afford a resilient and soft support for the bananas and also affords at least one thickness at almost all other points to completely enclose the bananas and insulate them against low temperatures.

For the pack where low temperature conditions are not met, as shown in Figs. 1 and 2, either one of the larger pads is used in conjunction with the small pad 64. For example, the largest pad 48 may be laid crisscross on the bottom and then the small pad is placed over it. In Figs. 1 and 2, as shown, the pack comprises the long pad with the portion 58 laid on the bottom, and the portions 60 and 62 laid on top of it, the sections 62 being of such length as to meet approximately at the middle; then the small pad with the end portions is laid over the bottom. The purpose of the small pad in either case is to protect the larger and more expensive pads from injury during shipment of the bananas. In any case, there are at least three thicknesses of pad on the bottom for protection of the bananas against injury. This construction of the pads permits use of the same stock sizes for summer and winter shipment.

It will be noted that in the pack shown in Figs. 1 and 2, the only protection at the ends of the crate is that afforded by the sections 66 of the small pad. This protection is necessary to prevent bruising of the hands at the ends of the crate, as might occur during starting and stopping of a vehicle or in unloading of the crates. Side wall protection against bruising is not necessary because the hands are supported and positioned by the saddle 18.

The invention having been thus described, what is claimed is:

1. A banana package comprising a bottom and side and end walls, the bottom having a central upstanding ridge extending substantially the full length thereof, and a hand of bananas, said hand comprising a plurality of bananas joined at their inner ends by a hard fibrous recessed heel portion, said heel portion being supported and positioned by the ridge against injury to the bananas.
2. A banana package comprising a bottom and side and end walls, the bottom having a central upstanding ridge extending substantially the full length thereof, and a plurality of hands of bananas, each hand comprising a plurality of bananas joined at their inner ends by a hard fibrous recessed heel portion, the several hands being laid in the package with the recessed heel portions supported and positioned by the ridge against injury to the bananas.

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