Jan. 9, 1940. L. M. TRACY 2,186,352

METHOD AND MEANS FOR ICE CRATING VEGETABLES

Filed Feb. 20, 1939

Fig. 1.

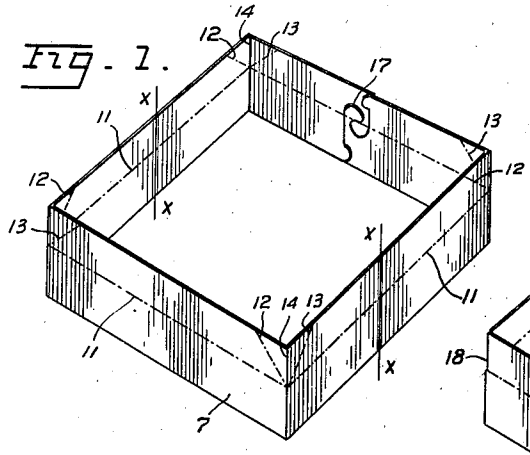


Fig. 2.

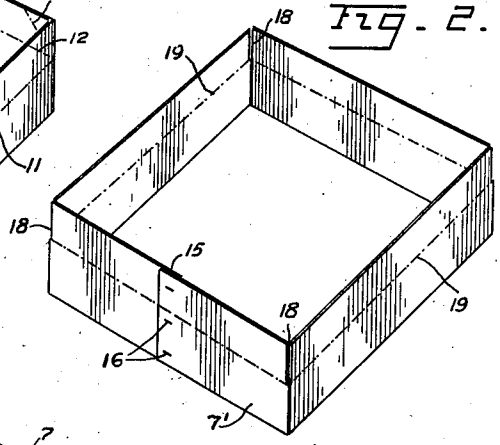
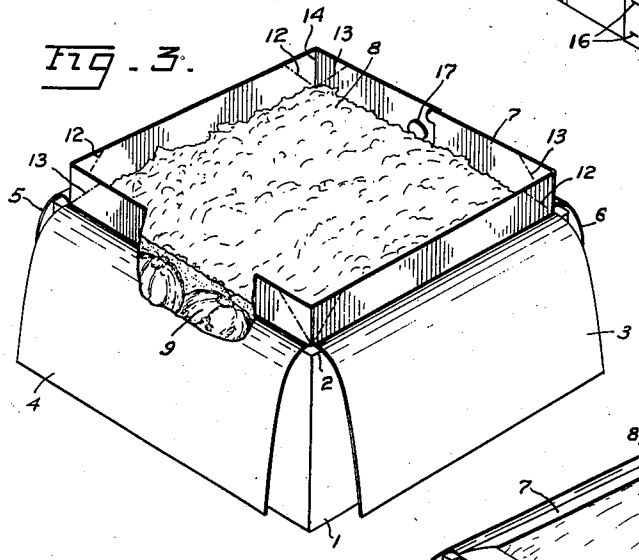


Fig. 3.



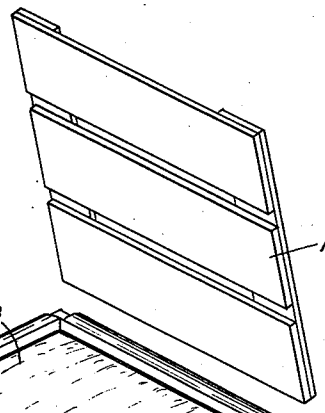
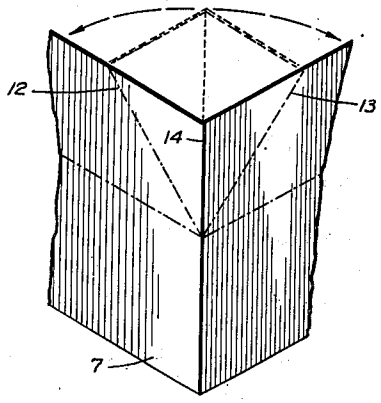


Fig. 5.



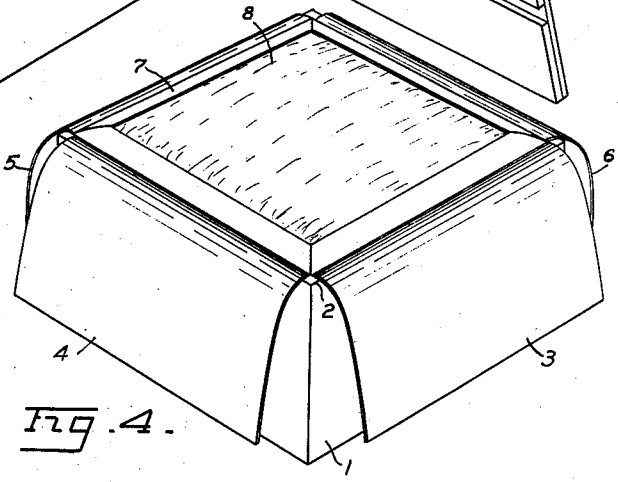


Fig. 4.

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METHOD AND MEANS FOR ICE CRATING VEGETABLES

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Application February 20, 1939, Serial No. 257,382

3 Claims. (Cl. 62—1)

This invention relates to the packing or crating of vegetables in cracked ice for long distance shipment to the market, particularly to such vegetables as lettuce, broccoli, carrots, chickory, and other similar farm products, and the invention has for its object an improved method and means for insuring a proper ice layer on top of the pack when the cover is nailed down and of retaining the layer against shaking out, particularly at the corners, and also to prevent bruising and injury to the top layer of vegetables in lidding the crate.

Other features and advantages of the invention will appear in the following description and accompanying drawing.

In the drawing:

Figure 1 is a perspective view of a special cardboard frame or collar used in carrying out my invention.

Figure 2 is a view similar to that of Figure 1 but showing a modified form of the collar.

Figure 3 is a perspective view of a crate of lettuce packed in accordance with my invention as seen before folding the paper liner and special collar inwardly and nailing on the lid or cover, and with a portion broken away to show the thickness of the upper layer of cracked ice.

Figure 4 is a view similar to that of Figure 3 but showing the crate as with lid removed for unpacking, and with paper lining outfolded to show how the inwardly bent collar retains the ice layer.

Figure 5 is an enlarged perspective view of the near corner of the collar of Figure 3 to illustrate the manner of its scoring and inward folding for all corners.

Before describing the drawing in detail it should be explained that in shipping the character of farm products mentioned, especially lettuce, a standard crate generally measuring about 21⅝" long by 17½" wide inside, (though it may be any size) is first lined with heavy paper by placing one strip lengthwise and another crosswise of the crate so as to cover the bottom with a double layer of paper, and with a single layer extending up all four sides and with a flap hanging out over the upper edge at each side for eventually folding inwardly over the contents when the crate is fully packed.

In packing, a layer of cracked ice is first placed on the bottom on the double layer of paper liners, and the lettuce is then packed into the crate in the form of horizontal layers one above the other and with a layer of cracked ice placed between the layers and also filling all of the interstices, and sometimes a sheet of paper is also used between the layers. Finally a thick layer of cracked ice is placed on top of the upper layer of lettuce, the four paper flaps are folded inwardly over the upper layer of ice, and the lid of the crate is placed on it and nailed in place. The crate is of course somewhat overfilled as is customary with the packing of fruits and vegetables so as to force the contents down tightly—this generally being done in a press—and since the four flaps of paper liner are necessarily unattached to each other at the corners of the crate it leaves a crack or opening at each corner where the flaps are folded over the upper ice layer which permits much of the finely cracked ice to be lost at the corners, also to melt more freely at the corners which are open at the cracks for outside air to enter, and the ice loses at these points what heat insulating effect the paper flaps give at other points, and with a result that the lettuce at the corners of the crate does not stand long shipments as well as the remainder of the pack. Besides the upper layer of lettuce is liable to injury from the lidding machine, and the lid, as a sufficient protective layer of ice is difficult to maintain with the paper flaps.

I have discovered that if an auxiliary frame or continuous collar of fairly heavy cardboard (preferably waxed or paraffined) be placed tightly within the crate so as to project several inches above the top edge of the crate, this will form a retaining wall all around the upper layer of lettuce so that a deep layer of cracked ice may be spread over the top layer and uniformly into the four corners and packed down tightly without the slightest breaking away or leakage at the corners. Then if the four flaps of the paper liner are folded inward over the upper ice layer while simultaneously the projecting portion of the cardboard collar within the liner is also folded inwardly over the ice, and thereafter the lid nailed on, that no loss of ice occurs at the corners, no injury to the upper layer of lettuce can result from the lidding machine or lid when nailed down, and the contents is received at its destination in much better condition. It is of course understood that such shipments are made in refrigerator or ice filled cars in the known manner. This improved method of ice packing vegetables which I have devised, has already come into extensive use in the transcontinental shipment of lettuce from California to the Middle West cities and Atlantic seaboard.

In the drawing the crate is designated 1, its upper edge 2, the flaps of the two paper strips

which form the interior lining are indicated at 3, 4, 5 and 6, my special ice retaining collar 7, the top layer of cracked ice 8, and the upper layer of lettuce 9, the lid 10 of the crate.

In Figures 3 and 4 the retaining collar is of the form shown in Figure 1 and wherein a flat strip of waxed cardboard 7 of about six inches in width and of a length to go entirely around the inside of the crate, is scored at the four corners to form a rectangular frame as shown in Figure 1, but which may be collapsed flat for shipping from the manufacturer to the packer.

The cardboard frame of Figure 1 is shown preferably (though not necessarily) horizontally scored along the line 11 to fold inwardly over the ice, and angularly and vertically scored at its corners as at 12, 13 and 14 so as to form a gore to fold inwardly and under one of the side walls of the frame when it is folded. Instead of folding under, the gore may be folded flat on top of the side walls after they are folded inwardly.

If the cardboard is of medium weight, the score lines 11 may be omitted as the portion of the walls which project above the ice layer may be simply bent inwardly over the ice when the paper flaps are folded inwardly one over the other, though if the cardboard collar is of thick stock or of corrugated stock, one or more horizontal score lines 11 materially aid in the bending of the collar over the ice. It is of course understood that mechanical equipment is generally used to expedite the inward folding of the flaps and placing of the lid, but this is apart from the present invention.

In the form of collar shown in Figure 2 the walls 7' are overlapped at 15 and stapled as at 16 or otherwise secured, and it should be noted that such a joint may be at the opposite side wall or at all four side walls, or even at one or more corners, if desired to manufacture the collars from shorter stock. Another way of joining the ends of the stock is indicated at 17 in Figure 1 where any conventional interlocking tongue arrangement as used in the folding paper box trade may be used. Such a joint may also be used in two or more of the walls if desired for economy of stock.

In the collar of Figure 2 no gore is used at the corners, but instead the corners are slotted vertically as at 18 from the upper edge down to the point where the sides are to be folded over the top layer of ice to retain it in place. This form of collar may also be scored along the line 19 if desired.

It should also be noted, that while I show and prefer a complete frame with overlapping ends clipped or otherwise secured together so as to facilitate placing the frame within the lettuce crate after it is nearly full, nevertheless the ends of the cardboard collar may be loose, and abutting if desired, though overlapping ends are preferred. Also to be noted is that the frame could be divided along the lines x—x indicated in Figure 1 either at the two opposite sides, or at all four sides so as to be insertible within the crate in sections, but it is highly desirable that the corners be closed to hold the top layer of cracked ice properly at these points.

In using the collar, when all but the last layer of lettuce has been packed in place, the collar is placed within the crate and shoved down tightly along the walls to stay in position with the correct amount projecting above the upper edge of the crate the final layer of lettuce is packed within the collar, the finely cracked ice filled into the interstices and formed into a thick layer on top, the collar and paper flaps folded inwardly over the ice and the lid forced down and nailed in place.

The specific form of the collar shown in Figure 2 of the drawing is claimed in my copending patent application filed December 1, 1938, under Serial No. 243,475.

While I have described my improved method of ice packing with lettuce, it is to be uderstood that the invention is applicable to the ice packing of any desired vegetables or fruits, and that therefore the word "vegetables" as used herein and in the claims is to be taken as including any such other vegetables and fruits packed for shipment in this manner. Also, the word "cracked ice" as used herein and in the claims is not limited as to any degree of fineness to which the ice is cracked but includes ice crushed, made or reduced to any degree of fineness, including the so-called snow ice, all as used in the ice crating of vegetables as herein described.

I claim:

1. The method of crating vegetables which includes paper lining a crate with the ends or flaps of the lining hanging out of the upper open side of the crate, packing the vegetables within the crate together with cracked ice to a point below the top of the crate, placing retaining walls of stiff material within the crate and liner to project upwardly above the crate, continuing the packing of the crate to completion and placing a layer of cracked ice over the upper layer of vegetables within said retaining walls and substantially below their upper edges, then folding the projecting retaining walls and the lining flaps inwardly over the ice layer, and securing a lid in place over the crate.

2. For the packing of vegetables, a collar of stiff material adapted to extend around the inner walls of a crate of vegetables and project above the upper layer of vegetables to receive a layer of cracked ice within the collar, said collar when in place being a rectangular frame adapted to be folded inwardly along an intermediate point in the width of the collar.

3. For the packing of vegetables, a collar of stiff material adapted to extend around the inner walls of a crate of vegetables and project above the upper layer of vegetables to receive a layer of cracked ice within the collar, said collar when in place being a rectangular frame adapted to be folded inwardly along an intermediate point in the width of the collar, and the corners of said collar scored to form foldable gores.

LEVIN M. TRACY.