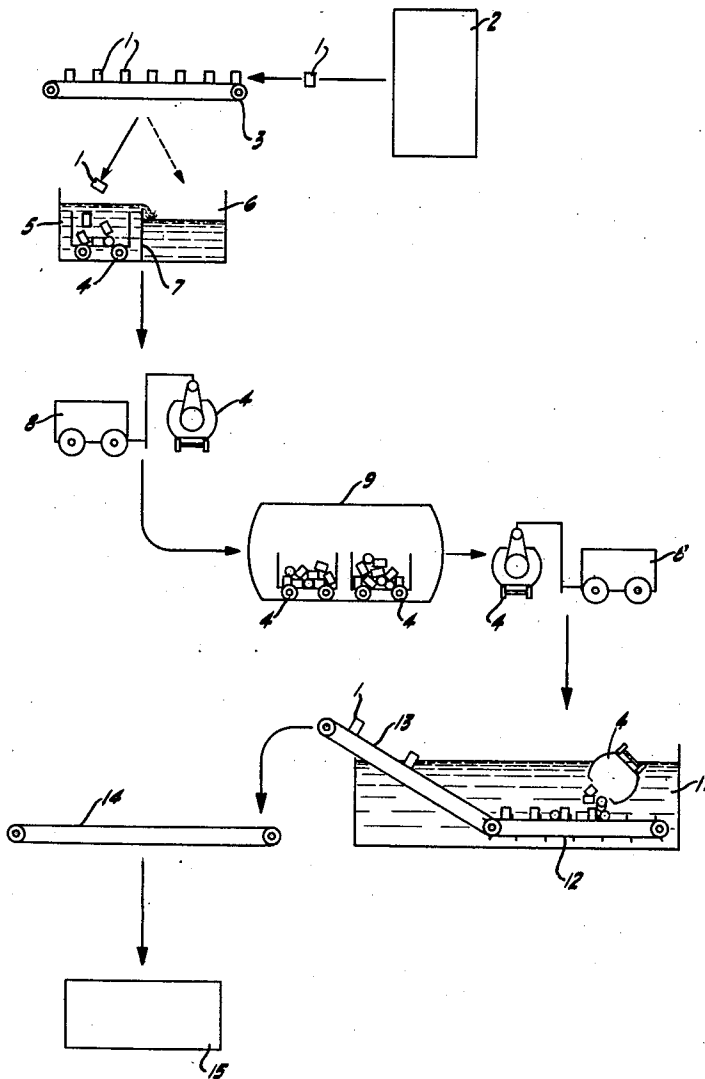


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SYSTEM OF CAN TRANSFER

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SYSTEM OF CAN TRANSFER

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This invention relates to a method of transporting cans from a can seamer to and through a cooker and hence to a labeling machine.

In the canning industry, two types of cookers are presently used, rotary cookers and retort cookers. When a rotary cooker is used, cans from a seamer which seals the lids to the cans must be delivered to the cooker in a predetermined and oriented position, and after passing through the cooker, the cans are conveyed by a conveyor belt to the labeling machine. The cans, in passing through this type of cooker, traverse a spiral channel which in part determines the cooking cycle. The disadvantage of this type of cooker is that its operating and initial costs are high.

When a retort type of cooker is used, the cans from the seamer are dumped haphazardly into a retort basket, the loaded retort basket is conveyed by a fork lift truck into the retort cooker and after the cans have been cooked, the basket is transferred from the cooker to a conveyor belt adjacent the labeling machine. The cans are then removed from the basket and placed in a predetermined position on a conveyor belt by which they are delivered to the labeling machine.

Although the initial and operating costs of a retort cooker are considerably lower than the corresponding costs of a rotary type of cooker, the can transfer system used in connection with the retort cooker has two decided disadvantages. In the first place, a considerable percentage of the cans are dented when they are dumped from the seamer into the retort baskets, and in the second place, the manual transfer of the cans from the retort baskets to the conveyor belt leading to the labeling machine requires, in normal operation, the labor of from five to eight men.

In general, the object of this invention is the provision of a canning system in which a retort type of cooker can be used, in which denting of the cans while being transferred from the seamer to the retort basket can be avoided, and in which the manual transfer of the cans from the retort basket to the conveyor belt leading to the labeling machine can also be avoided.

More specifically, the object of this invention is the provision of a canning system wherein the cans from the seamer are charged into the retort basket while the baskets are immersed in a bath of water so as to dampen the fall of the cans into the baskets, wherein the cans are discharged from the baskets coming from the cooker bodily into a tank of water so as to break their

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fall and prevent their denting, and wherein the cans are then picked up from the tank by a conveyor belt and passed through a can unscrambler to the labeling machine.

5 The invention possesses other advantageous features, some of which, with the foregoing, will be set forth at length in the following description where that form of the invention which has been selected for illustration in the drawings
10 accompanying and forming a part of the present specification is outlined in full. In said drawings, one form of the invention is shown, but it is to be understood that it is not limited to such form, since the invention as set forth in the
15 claims may be embodied in a plurality of forms.

Referring to the drawings:

The single figure shown in the drawings is a schematic flow sheet of a can transfer system embodying the objects of my invention.

20 As shown in this flow sheet, cans 1 are discharged from a seamer 2 of a conventional form and which serves to seal the can lids to the cans, to an endless conveyor 3. From the endless conveyor 3 the cans 1 are discharged into a retort
25 basket 4 immersed in one of two tanks 5 and 6 and which are arranged to communicate with each other over a common intermediate wall 7. The wall 7 is substantially lower than the end and side walls of the tanks 5 and 6 and prior to
30 immersing the basket 4 in the tank 5 this tank is filled with water to the level of the wall 7. Contained in the tank 6 is a volume of water which is less than the entire volume or capacity
35 of the tank 6 as determined by the level of the wall 7, by a volume equal to the displacement of the basket 4 plus the displacement of the cans 1 with which the basket is charged. It will
40 therefore be seen that when the basket 4 is immersed in the tank 5 and is loaded with cans, a volume of water equal to the displacement of the basket plus the cans will overflow the wall 7
45 into the tank 6, thereby raising the level in this latter tank up to the level of the common wall 7. The tank 6 is then ready to receive an alternate basket 4 and an alternate batch of cans 1, where-
50 upon water overflows from the tank 6 into the tank 5. By resorting to this method of alternately loading two or more baskets the fall of the cans is dampened and denting thereof is avoided, and furthermore, the height of the end and side walls of the tanks 5 and 6 is substan-
55 tially reduced over a height of the tank which would be required in the event that use were not made of the common overflow wall 7. This latter feature is of importance for it decreases the

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height to which the baskets must be raised when immersing them in and lifting them from the tanks.

As the baskets 4 are loaded, they are elevated from the tanks 5 and 6 by a fork lift truck 8, and transported to a retort cooker 9. The baskets 4 are perforated so as to permit of their drainage as they are lifted from their associated tank, and furthermore, they are preferably provided with wheels or casters by which they can be rolled into and out of the retort cooker.

After the cooking operation has been completed, the retort is opened and the baskets removed and conveyed or transported by the fork lift truck 8 to a basket unloader 11 and in which the baskets are upset so as to discharge the cans 1 therein without danger of denting them. The unloader 11 includes a tank filled with water and provided at its lower end with an endless conveyor 12 and with an inclined conveyor 13 leading out of the tank. The inclined conveyor discharges its cans to a can unscrambler 12 of conventional form and the can unscrambler discharges its oriented cans into a can labeler 15 also of standard construction.

From the above description it will be seen that the increase in economy of my can transfer system depends upon the use of the basket loader consisting of intercommunicating tanks or compartments 5 and 6 and upon the use of the basket unloader consisting of the tank 11 and its associated conveyors 12 and 13. The basket loader permits the cans to be loaded into the baskets without any particular care and without denting of the cans. The basket unloader permits the dumping of the cans from the immersed basket directly into the unloader and the conveyors 12 and 13 associated therewith avoiding the manual labor previously required for discharging or removing the cans from the baskets to the can labeler. These changes to the systems previously used make it possible to use a cooker of the retort type, which as above stated, has an initial cost far below the cost of a rotary cooker and is far more economical to operate.

I claim:

1. The method of loading dentable articles into containers, comprising providing a tank divided into two compartments by a partition, the upper edge of which terminates short of the upper

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side edges of the tank, placing a quantity of liquid in the compartments sufficient to fill one compartment up to the level of the top edge of the partition and to only partly fill the other compartment up to said level, immersing a container in the fuller compartment, dumping articles into the fuller compartment to cushion the articles by impact with the liquid and gravitate the articles into the container and to displace liquid from the fuller compartment into the other compartment to raise the level in said other compartment, and then repeating the process by placing a container in said other and now fuller compartment and dumping articles into the latter container in said other compartment.

2. The method of loading dentable articles into containers, comprising providing a tank divided into two compartments which communicate with one another at a level beneath the overflow level of the compartments, placing a quantity of liquid in the compartments sufficient to fill one compartment up to the level of the place of communication of the compartments with one another and to only partly fill the other compartment up to said level, immersing a container in the fuller compartment, dumping articles into the fuller compartment to cushion the articles by impact with the liquid and gravitate the articles into the container and to displace liquid from the fuller compartment into the other compartment to raise the level of the liquid in said other compartment, and then repeating the process by placing a container in said other and now fuller compartment and dumping articles into the latter container in said other compartment.

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