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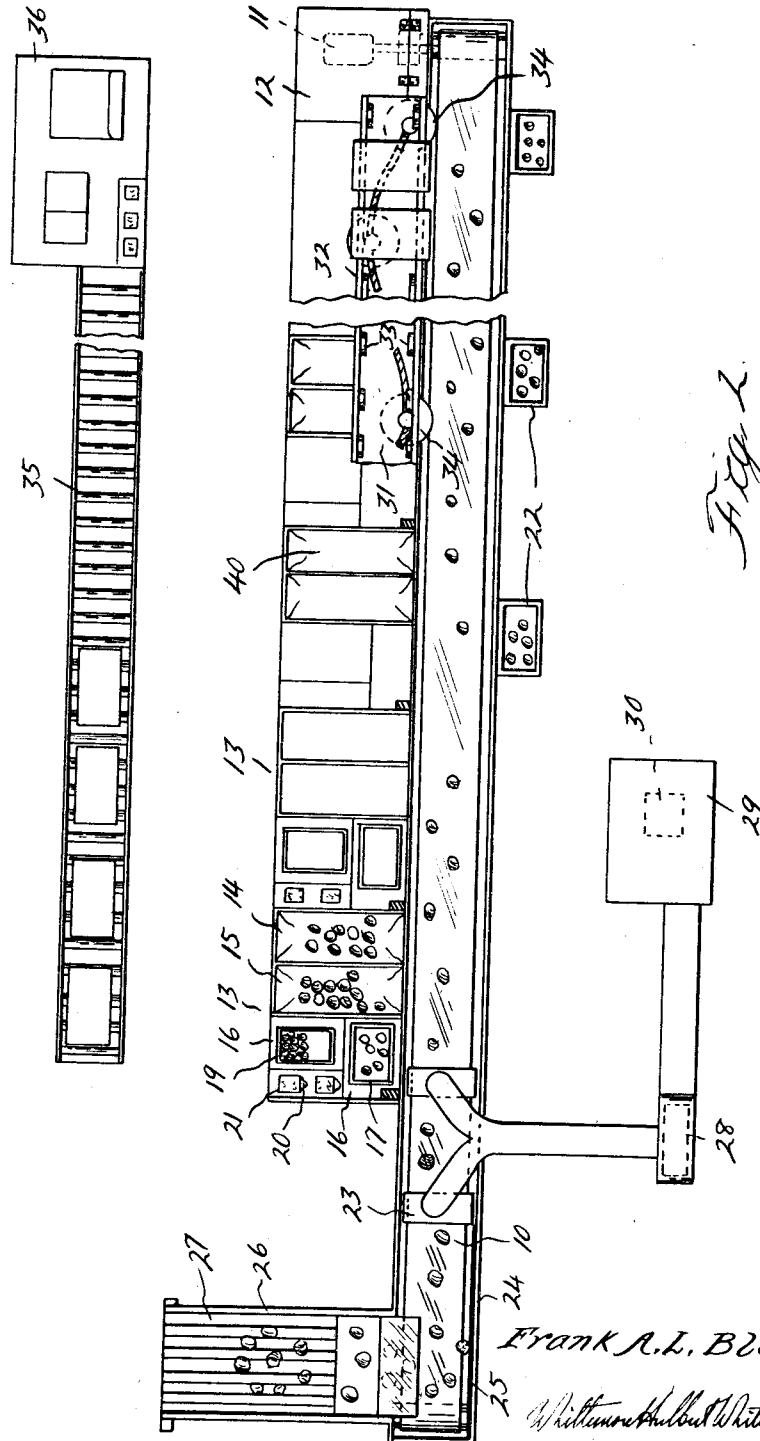
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APPARATUS FOR HANDLING MERCHANDISE

Filed Sept. 10, 1928

2 Sheets-Sheet 1



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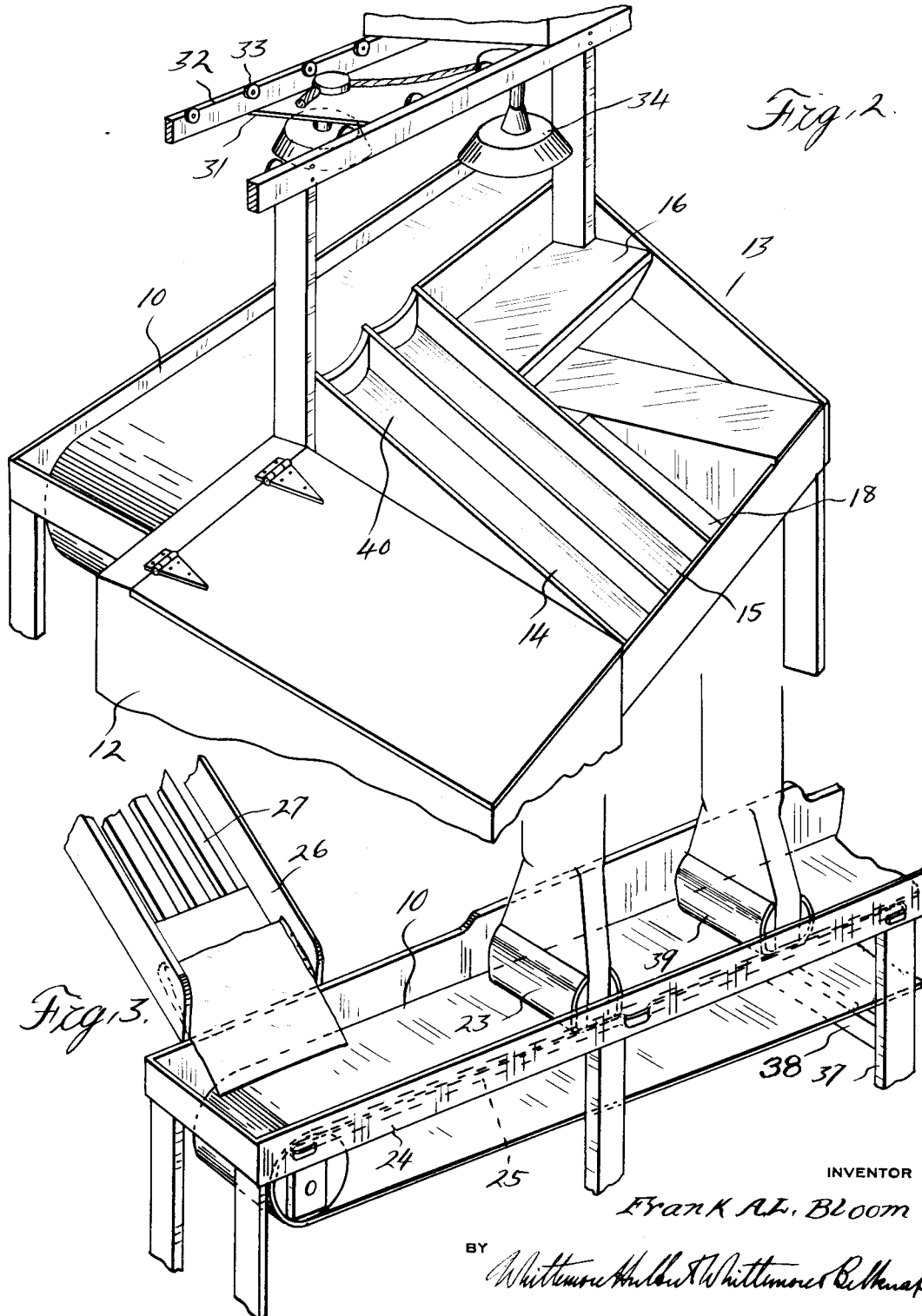
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APPARATUS FOR HANDLING MERCHANDISE

Application filed September 10, 1928. Serial No. 305,007.

This invention relates generally to the method and apparatus for handling merchandise such as fruits and vegetables and refers more particularly to the handling of
5 tomatoes.

An object of the invention is to provide means for efficiently and expeditiously handling tomatoes which have been shipped to a central distributing point and which must
10 be unwrapped, sorted and repacked before delivery to the wholesale and retail trade.

Other objects and advantages of my invention consists in certain novel features of construction, combinations and arrangements of
15 parts as will be more fully described and particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a plan view of the apparatus constructed in accordance with the present
20 invention;

Figure 2 is a view of one section of the apparatus showing conveyor and suction means for disposing of the paper wrappings;

Figure 3 is a view of another section of
25 the apparatus showing in detail one of the receiving units.

Generally the method comprises conveying the individually wrapped tomatoes past a device for removing the coverings and then
30 past certain designated bins or compartments into which the tomatoes ready for immediate packing, are placed by operators along the line of travel. The balance of the tomatoes on the conveyor are sorted according to degree
35 of ripeness and size and placed in conditioning rooms for ripening or maturing until they too are ready for packing.

Specifically the apparatus comprises a conveyor 10 preferably of the endless belt type
40 of any standard make, which is adapted to be actuated in any desired manner such as by motor 11 mounted in a box 12 at one side of the conveyor. This source of power may be connected through a variable speed reduction
45 of any standard make. On one side of this conveyor are positioned a plurality of sorting and packing units 13, each unit consisting of a pair of inclined bins or troughs 14 and 15 respectively, a shelf 16 upon which
50 a container 17 for lower and cheaper grades

of tomatoes is placed, an inclined support 18 adjacent to trough 15 upon which a carton 19 is positioned, and a pair of paper holders 20 for containing paper 21 used in rewrapping the tomatoes as they are placed in carton
55 19. Each unit 13 is adapted to be presided over by an operator (not shown) in a manner to be presently described.

On the side of the conveyor opposite the units 13 are placed a plurality of boxes 22, 60 while directly above the belt 10 is positioned a properly proportioned suction nozzle or stripper 23. At the extreme front end of the conveyor the side walls 24 are provided with bumpers 25 for cushioning the tomatoes as
65 they are rolled upon the conveyor from the delivery chute 26. This chute is provided with a bottom 27 consisting of spaced slats forming a wooden grate which permits dirt and decayed tomatoes to fall through the
70 same, before they reach the conveyor.

With the apparatus as thus far described, the operation is as follows: The tomatoes are dumped from the crates in which they are shipped, directly upon the chute 26 and are
75 directed down upon the belt 10, the bumpers 25 cushioning the tomatoes and preventing bruising of the same. The tomatoes are now conveyed to the stripper 23. Heretofore the papers were removed by hand necessitating
80 the handling of all the tomatoes and presenting a problem in the disposal of the refuse. Under the method herein described, the wrappers are drawn off under the action of a strong induced draft operating through the nozzle.
85 The papers on being removed, are drawn through the nozzle by a suitable fan 28 and blown to a restraining chamber 29 under which may be placed a baler 30 for the easy disposal of the refuse. The nozzle is so de-
90 signed as to increase the swirling motion of the air as it acts on the wrapped tomatoes, loosening and tearing away the paper wrappers.

As shown, the stripper is placed just in
95 front of the first unit 13 and the operators are stationed at spaced intervals along the side of the conveyor opposite to said units. As the tomatoes are carried past the operators by the moving belt, they place the tomatoes 100

ready for immediate packing in the troughs 14 and 15 according to size. The balance of the fruit is sorted simultaneously into containers 22 at the side of the operators and placed in conditioning rooms for ripening.

Preferably each unit 13 is adapted to be presided over by a separate operator whose duty it is to pack the tomatoes in the troughs 14 and 15 into carton 19. The tomatoes are separately wrapped with sheets of paper taken from holders 20 and as soon as carton 19 is filled, it is taken away and another placed in position. The containers 17 are also replaced when filled, the tomatoes in these cartons not being wrapped.

For facilitating the sorting and packing operation there is provided a longitudinally extending rack 31 positioned at one side of the conveyor and above the units 13, as clearly shown in Figure 2. This rack is provided with upstanding side walls 32 within which are journaled rollers 33 which project slightly above the top edges of the walls. The arrangement is such that the walls constitute a track upon which empty cartons are placed and moved along for the convenience of the operators at the units 13. This rack is also adapted to support a plurality of lamps 34 which illuminate the tomatoes upon both the conveyor and unit and which diffuse a light particularly helpful for the sorting of tomatoes.

As each carton 19 is filled, it is taken off of the support 18 and placed upon a second conveyor 35 preferably of the roller type of any standard make, where it is gradually rolled down to a weighing table 36. An operator at this table weighs and seals each carton whereupon it is ready to be delivered to the wholesaler. The container 17 contains the lower grade tomatoes which being very ripe, must be used immediately. These are adapted to be used for peddler trade and are removed to a different point than those packed for the wholesale trade.

It should be stated that the conveyor 10 is preferably waxed from time to time, this wax absorbing and taking up any dirt or other refuse from the tomatoes which would otherwise work into and gum up the belt. As shown in Figure 3, the conveyor frame 37 is provided with spaced cross bars 38 which besides functioning to strengthen the frame, are also adapted to contact with the lower level of the belt and constitute scrapers for removing a great deal of the dirt sticking to the belt.

It will also be noted that the lower edge portions of each pipe 23 are rounded as at 39 instead of terminating in a straight edge. Thus the air sweeps around the rounded portion 39 and tends to lift the wrappers from the tomatoes. This rounded edge construction thereby facilitates the entrance of the paper wrappers into the mouth of the pipes and also

prevents the same from becoming lodged or caught upon the edges of the pipes.

It is furthermore noted that the bins or troughs 14 and 15 each have a flexible canvas bottom 40, the object thereof being to prevent the bruising of the tomatoes when they are placed in these troughs.

From the foregoing it will be apparent that I have provided a method and apparatus for handling merchandise and in particular, tomatoes which greatly expedites the sorting and packing of the tomatoes and which requires a minimum amount of space and labor.

What I claim as my invention is:

1. In an apparatus of the class described, a conveyor of the endless belt type, means for discharging individually wrapped tomatoes upon the conveyor, means associated with the conveyor opposite the discharge means for cushioning the tomatoes as they are discharged upon the conveyor, pneumatic means above the conveyor adjacent the discharge means for removing the wrappers from the tomatoes, and means beyond the removing means along the conveyor for receiving tomatoes according to ripeness and size.

2. In an apparatus of the class described, a conveyor of the endless belt type, means at one end of the conveyor for discharging individually wrapped tomatoes upon the conveyor, pneumatic means above the conveyor adjacent the discharge means for removing the wrappers of the tomatoes, and means beyond the removing means along the conveyor for receiving tomatoes according to ripeness and size.

3. In an apparatus of the class described, a conveyor of the endless belt type, means at one end of the conveyor for discharging individually wrapped tomatoes upon the conveyor, means associated with the conveyor opposite the discharge means for cushioning the tomatoes as they are discharged upon the conveyor, pneumatic means above the conveyor beyond the cushioning means for removing wrappers from the tomatoes, and means along the conveyor beyond the removing means for receiving tomatoes according to ripeness and size.

4. In an apparatus of the class described, a conveyor of the endless belt type, means for discharging individually wrapped tomatoes upon the conveyor and including means for permitting dirt and decayed tomatoes to fall through the same, pneumatic means above the conveyor adjacent the discharge means for removing the wrappers of the tomatoes, means beyond the removing means along the conveyor for receiving tomatoes according to ripeness and size, and a track of the roller type above the receiving means and substantially parallel thereto upon which empty cartons may be removed for the convenience of operators located along the receiving means.

5. In an apparatus of the class described,

a conveyor of the endless belt type, means for discharging individually wrapped tomatoes upon the conveyor, pneumatic means above the conveyor adjacent the discharge means for removing the wrappers of the tomatoes, means beyond the removing means along the conveyor for receiving tomatoes according to ripeness and size, and a second conveyor of the roller type adjacent the first conveyor for receiving and conveying to a weighing table cartons as they are filled with tomatoes in the receiving means.

6. In an apparatus of the class described, a conveyor of the endless belt type, a chute for discharging individually wrapped tomatoes upon the conveyor, resilient means associated with the conveyor opposite the discharge means for cushioning the tomatoes as they are discharged upon the conveyor, means along the conveyor for receiving tomatoes according to ripeness and size, and pneumatic means between the last mentioned means and the chute for removing the wrappers of the tomatoes.

7. In an apparatus of the class described, a conveyor of the endless belt type, means for discharging individually wrapped tomatoes upon the conveyor, and means adjacent the discharge means for removing the wrappers of the tomatoes including a stationary nozzle above and opening toward the conveyor, and means creating a strong induced draft through the nozzle.

In testimony whereof I affix my signature.

FRANK A. L. BLOOM.